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A PROGRESSIVE GLOBAL FLOOD MODEL CONFIRMED BY ROCK DATA ACROSS FIVE CONTINENTS

Timothy L. Clarey, and **Davis J. Werner**, Institute for Creation Research, 1806 Royal Lane, Dallas, Texas 75229, tclarey@ICR.org

ABSTRACT

We have compiled nearly 3000 stratigraphic columns across five continents using oil wells, measured columns and seismic data. We divided the fossil-bearing rock record into six packages of sedimentation based on the "mega-sequences" concept of Sloss. We propose a new progressive Flood Model that aligns with both Scripture and the rock record. The earliest megasequences (Days 1-40) show the least extent and lowest average thickness of sediment. These earliest three megasequences are almost exclusively filled with marine fossils. Subsequent megasequences (Days 40-150) show progressively more coverage and more sediment volume and progressively more land animals and plants. The five continents show a maximum peak in surface coverage and a maximum peak in volume during the 5th sequence (about the K-Pg boundary, Day 150). We interpret these data to represent a progressive Flood that aligns with the catastrophic plate tectonics (CPT) and runaway subduction models of Baumgardner. Initial plate motion and the creation of limited amounts new seafloor spread the thinnest and earliest megasequences across limited portions of the continents. In many places, but not all, the beginning of the Flood is marked by the deposition of the Sauk megasequence. Continued creation of hot, new ocean lithosphere caused the seafloor to rise, pushing the water level progressively upward. This process peaked near the end of the 5th sequence (Zuni). Although plate motion continued unhindered during the Tejas, making roughly one-third of the ocean seafloor, subsequent cooling of the older seafloor caused ocean basins to sink, drawing water off the continents. This caused a shift in sedimentation to the offshore as the Flood receded during the 6th sequence (Tejas, Days 150-314). In addition, our research has found that the Tejas megasequence has the second most volume of any individual megasequence, totaling 32.5% of the global Phanerozoic deposits. These data suggest the post-Flood boundary is high in the Cenozoic, near the top of the Neogene, near the end of the Tejas. Continuous deposition of limestone and marine rocks from the Cretaceous up through the Neogene across Turkey and the surrounding regions confirms this conclusion. Independent verification of CPT, and the rapid formation of new ocean crust during the Flood, is supported by strontium ratios in the marine rock record.

KEYWORDS

megasequence, progressive Flood, CPT, strontium ratio, fossil record, Flood boundary

I. INTRODUCTION

There have been few truly comprehensive Flood geology models proposed since the one described in *The Genesis Flood* (Whitcomb and Morris, 1961). A few ideas have been proposed as a general model of the Flood, such as hydroplate theory (Brown, 2008), and other pieces have been added, such as catastrophic plate tectonics (Baumgardner, 1986, 1994a, 1994b; Austin et al, 1994), but certainly none that were based on a detailed examination of the sedimentary rocks across the globe.

Since 1961, much has been added to the general geological database, including the first ocean bathymetry maps, the collection of deep-sea drilling cores, and the gathering of new types of geophysical data across the oceans. This has led to the general acceptance of the theory of plate tectonics among conventional geologists. New technology has also contributed greatly to the knowledge base, with extreme deep-water oil wells and seismic tomography. Any model needs to adopt a mechanism that fits and explains as much of these data as possible.

This paper presents a new and globally comprehensive model for the Genesis Flood. It is based primarily on sedimentary rock data across five continents, entailing nearly 3000 compiled stratigraphic columns. We conclude that the data are best explained as a progressive Flood that utilizes catastrophic plate tectonics (CPT) as the most likely mechanism. We also incorporate the Biblical timeline into our data, matching Days 1, 40, 150 and 314 of the Flood to our stratigraphic data. In addition, the stratigraphic data are consistent with a high Flood/post-Flood boundary in or above the Pliocene (Upper Cenozoic). We suggest the top of the Pliocene or N-Q boundary (Neogene-Quaternary) as the end of the Flood.

A progressive Flood model also provides a framework for the fossil record. Our data suggest that the Flood waters buried the same ecological zones at approximately the same time globally. As the Flood progressed upward, it inundated similar topographic elevations on each continent simultaneously, and different ecological zones. This provides an explanation for the consistent changes in the fossils that are observed across every continent.

The mechanism of CPT, and its ability to rapidly form new ocean lithosphere, tracks consistently with the results of our stratigraphic study. Seismic tomography data collected in the last few decades across many of the world's subduction zones further confirm the modeling of Baumgardner (1986, 1994). CPT can also explain why the Flood peaked on Day 150 (Johnson and Clarey, 2021) and ultimately ended on Day 314 (Gen. 8:13), and provides a mechanism to drain the floodwaters off the continents. And CPT offers a reason why the tectonic plates are moving so slowly today. Furthermore, it is capable of producing the conditions necessary for a post-Flood Ice Age. Other models do not adequately explain all of these causes and effects, while still honoring the massive amount of data collected in the last 30 years. Finally, published $^{87}Sr/^{86}Sr$ ratios from ocean rocks independently confirm the production of new oceanic lithosphere during the Flood year and match our interpretation of a progressive Flood.

We feel this progressive Flood model, based on stratigraphic data across the globe, and incorporating the mechanism of CPT, provides a superior and comprehensive framework for a new understanding of the geology of the global Flood. It is based on the latest discoveries from onshore and offshore oil well exploration and the newest seismic data.

II. PREVIOUS WORK

Many geologic questions are actively debated within the creation geoscience community. For example, did the Flood end at the K-Pg or was it higher? And, what was the mechanism of the Flood, catastrophic plate tectonics or something else?

In addition, many Biblical questions about the Flood are still debated. For example, did the Flood cover the continents early and then again later, or did the water rise once and eventually reach a peak on Day 150? Or was it some combination of all of these interpretations?

Whitcomb and Morris (1961) believed the Floodwaters reached a peak height on Day 40 and stayed high until Day 150 when the water level began to recede. Others like Coffin (1983) thought the Floodwaters rose from Day 1 to Day 150, reaching a peak, and then subsiding. Walker (2011) suggested that the Floodwaters reached a zenith episode that may have lasted over a period of 60 days, from Days 90-150 of the Flood, but reaching an apex on Day 150 (T. Walker, pers. comm., 2017). Barrick and Sigler (2003) put forth a modified Whitcomb and Morris (1961) model, suggesting that the Floodwaters rose until possibly a few days after Day 40 then maintained that high level until Day 150, before subsiding.

Snelling (2009, 2014a) attempted to correlate the Floodwater levels to the uniformitarian sea level curve through time developed by Vail and Mitchum (1979) and Haq et al. (1988) (Fig. 1). Snelling has suggested that the Floodwaters rose until Day 40, peaked, and then dropped and fluctuated until rising again to a second peak on Day 150 of the Flood. Snelling (2014a) made a further attempt to tie his first peak in Floodwaters to the Sauk megasequence, near the Cambrian/Ordovician boundary, and his second peak to the Zuni megasequence, near the end of the Cretaceous. Both of these megasequences show the highest sea levels on the uniformitarian global sea level curve (Fig. 1), but are not reflective of the sedimentary rock record (Clarey and Parkes 2019).

Furthermore, a progressive Flood that peaks after 150 days is consistent with the Bible (Johnson and Clarey 2021) and with all

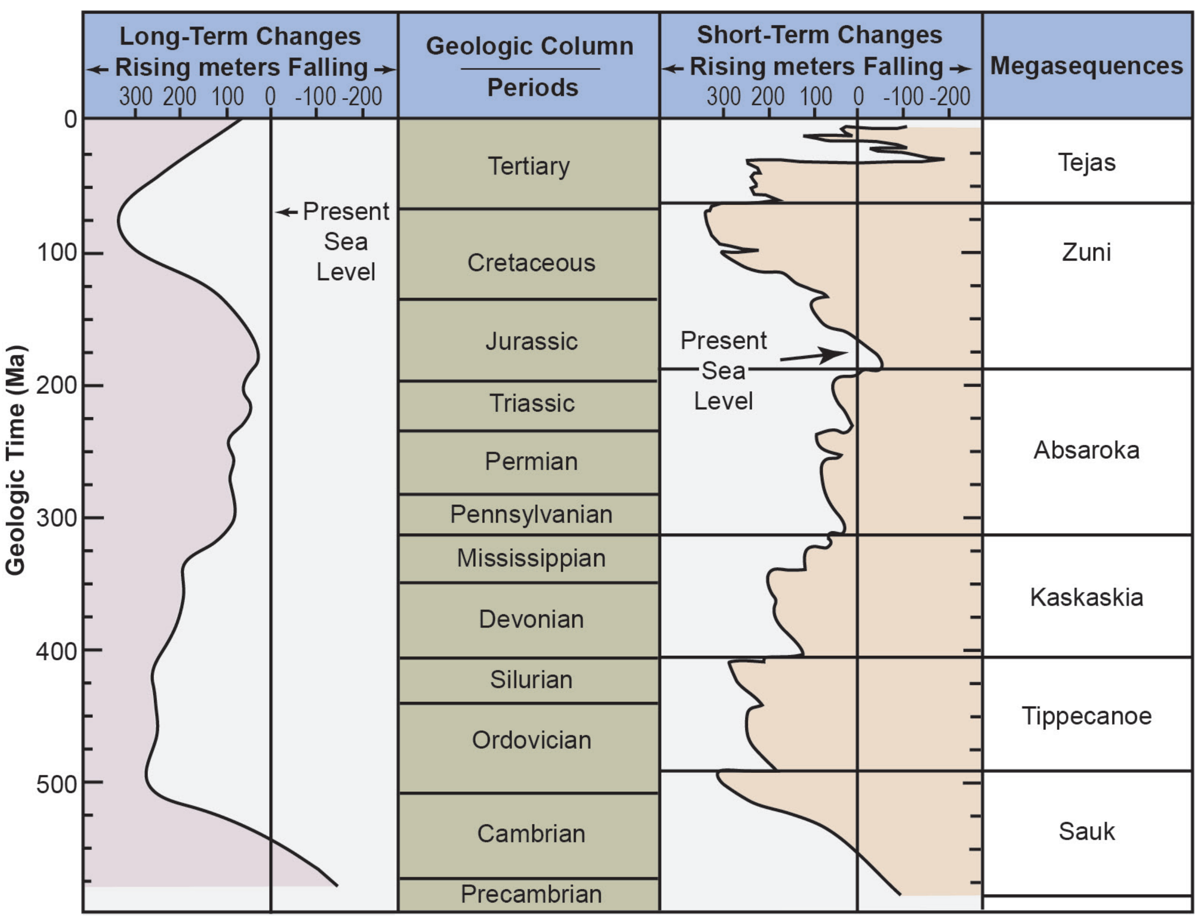

Figure 1. Uniformitarian sea level curve and its correlation to the geologic systems and megasequences (modified from Vail and Mitchum 1979; Haq et al. 1988).

stratigraphic and geophysical data. Genesis 7 gives insight into the water levels and flooding of the continents on Days 1, 40 and 150 of the Flood year (Johnson and Clarey 2021). Previous attempts have been made to merge the sedimentary rock record with data from the Biblical text (Whitcomb and Morris 1961; Coffin 1983; Brand, 1997; Barrick and Sigler 2003; Barrick 2008; Snelling 2009; Walker 2011; and Boyd and Snelling 2014). But, many of these earlier attempts relied heavily on uniformitarian geological data sets or were limited in scope. The present study connects key dates (Days 1, 40, and 150) in the Genesis Flood directly to the rock data, showing the progression of the rising waters.

III. METHODS

Nearly 3000 stratigraphic columns were compiled from 100s of published papers and available oil wells, measured sections, cross-sections and seismic data data from every major basin and uplift across North and South America, Europe, Africa and Asia. Within each column we identified the rock type and the stratigraphic megasequence intervals. Phanerozoic fossil-bearing rocks are divided into six packages of sedimentation based on the "mega-sequences" concept of Sloss (1963). We also kept track of a seventh "megasequence," called the Pre-Sauk. We did not incorporate this into the present paper as much more research is necessary to sort out the amount derived from the earliest moments of the Flood vs. the amount derived from the pre-Flood.

We input detailed lithologic data, megasequence boundaries and latitude and longitude coordinates into RockWorks, a commercial software program for geologic data, available from RockWare, Inc. Golden, CO, USA. Figure 2 is an example stratigraphic column showing the 16 types of lithology that were used for classification and the sequences. Depths shown in all diagrams are in meters.

A graphics program in RockWorks allowed us to generate isopach (thickness) maps for each megasequence and to record the basal lithology in each megasequence. We assumed the basal lithologic unit (bottom rock type in each megasequence) was best preserved in the transgressive/regressive depositional/erosional cycle. We then trimmed the computer-generated isopach maps to match the extent of each megasequence shown by the basal lithology maps.

Furthermore, our methods employed the identification of megasequence boundaries within each stratigraphic column. These were correlated across each continent and again, globally. We also utilized catastrophic plate tectonics as our mechanism for this model as discussed below.

Finally, we used an exegetical study of Genesis 7 to match Days 1, 40 and 150 to the stratigraphic and fossil data (Johnson and Clarey 2021).

A. Why Use Megasequences for Stratigraphic Correlations?

Conventional geologists have divided much of the Phanerozoic rock record into six packages or sequences of deposition (Dapples et al. 1948; Sloss 1963). Each sequence was defined as a discrete package of sedimentary rock bounded top and bottom by inter-regional unconformity surfaces across the North American craton (Sloss 1963). Oil and gas geologists working for Exxon further advanced the concept of sequences to include identifiable patterns on seismic data, creating seismic stratigraphy in the process (Payton 1977). Mitchum (1977) further defined each sequence as a stratigraphic unit of relatively conformable; genetically-related strata bounded top and bottom by unconformity surfaces.

Sequences supersede and include multiple geologic systems, and in many instances, can be recognized by their bounding erosional surfaces and sudden changes in rock type, independent of fossil content. Sequences record the sedimentology of the Flood, while fossils record what flora and fauna were buried within each sequence. They differ from the standard geologic time scale in that they are not solely based on changes of fossil content as are the Eras, Periods and Epochs.

Terminology associated with sequence stratigraphy has ballooned in the past decades, causing some to use the term 'megasequence' for the most prominent regional unconformities (Hubbard 1988). Haq et al. (1988) then used the term 'megasequence' to designate their First Order sequences, or their largest scale sequences, equivalent to Sloss sequences. Other secular and creation scientists have followed,

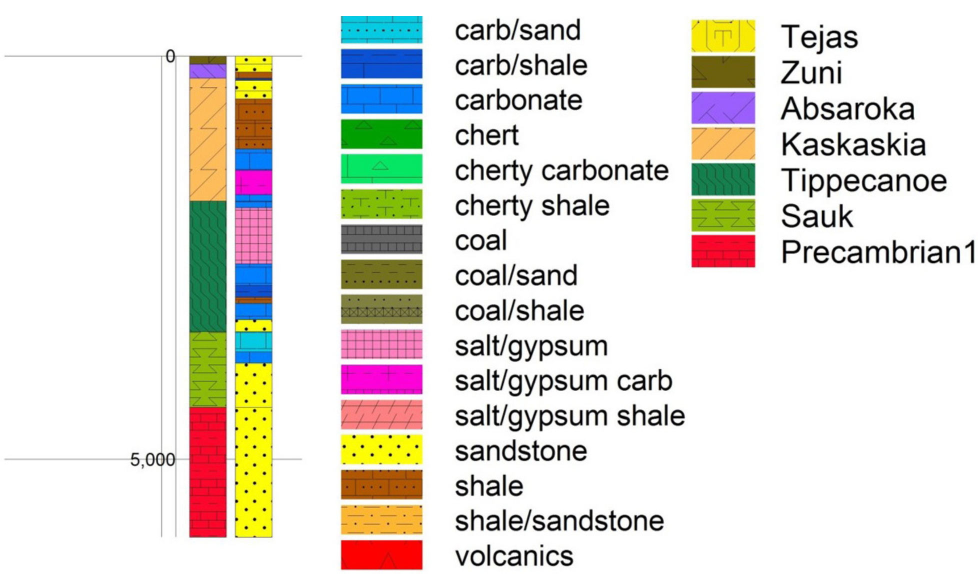

Figure 2. Example stratigraphic column from the Michigan Basin, USA showing the rock types (lithology) used for classification and the megasequence boundaries, including a Pre-Sauk interval.

using the term 'megasequence' to describe rock-stratigraphic units traceable over vast areas bounded by unconformities (or their correlative conformities) (Davison 1995; McDonough et al. 2013; Reijers 2011; Thomson and Underhill 1999). Hereafter, the term 'megasequences' will be used to designate the six, Sloss-defined sequences.

Although Sloss (1963) initially defined his megasequences across only the interior of North America, oil industry geologists quickly extended these megasequence boundaries to the offshore regions surrounding North America and to adjacent continents using well logs, seismic data and outcrops (Soares et al. 1978; Hubbard 1988) (Fig. 3). Using these data, oil industry geologists have tracked the megasequence boundaries from the craton to the ocean shelves on the basis of distinctive seismic reflection patterns (many due to abrupt truncations) as well as lithologic changes (xenoconformities, Halverson 2017) in oil well bores (using downhole well logs, biostratigraphic data and cores) (Hubbard 1988; Van Wagoner et al. 1990). These same Sloss-megasequence boundaries were correlated to at least three other continents based on seismic data and oil well drilling results (Sloss 1972; Soares et al. 1978; Hubbard 1988; Van Wagoner et al. 1990). In fact, very similar megasequence boundaries were identified and correlated to erosional events in North America, the Russian Platform, and Brazil (Soares et al. 1978) (Fig. 3).

Although megasequences are the primary method used for this global stratigraphic study, we do acknowledge that there is validity to the global geologic column (Clarey and Werner 2018a). And we assume system names like Neogene and Cretaceous refer to specific intervals of deposition that occurred during the year-long Flood event. These names are also used in our paper to identify specific intervals within some of the megasequences. Acceptance of the validity of the geologic column does not mean we advocate for deep time nor acceptance of the geologic timescale so commonly used in conventional geology.

B. Why Catastrophic Plate Tectonics as the Mechanism?

When Henry Morris co-authored *The Genesis Flood* (Whitcomb and Morris 1961) in the late 1950s, the theory of plate tectonics was not yet conceived. And Alfred Wegener's continental drift was still scoffed at by most geologists. It was not until the late 1960s and into the 1970s before most conventional geologists began accepting plate tectonics. It ultimately revolutionized the science of geology.

In 1994, creation geoscientists recognizing the evidence for runaway subduction (Baumgardner, 1986; 1994) proposed a new version of plate tectonics, known as catastrophic plate tectonics, where the tectonic plates moved several meters per second during the Flood year (Austin et al. 1994). And Henry's son, John Morris, did incorporate catastrophic plate tectonics into his book *The Global Flood* (Morris 2012). In fact, John's book was the follow-up book to *The Genesis Flood* that Henry wanted his son to write.

In our progressive Flood model, we employ catastrophic plate tectonics (CPT) as the primary mechanism for the Flood. Plate tectonics is not an evolutionary theory as it is based on real rock and geophysical data (Clarey 2016). But like all things in the evolutionary world, it is twisted to fit a deep time paradigm within the conventional geological community.

Plate tectonics theory remains the best explanation for the systematic differences in volcanoes globally because it offers a scientific reason for their differences in magma chemistry (Clarey 2019a). Maps of current earthquake epicenters can be used to define the boundaries of most of the plates. It also explains the location of many of the world's largest and deepest earthquakes. Further support for these plate boundaries is shown by the curvilinear chains of volcanoes found along the edge of the Pacific plate, associated with the Pacific Ocean's Ring of Fire. In addition, many of the major mountain ranges of the world also follow the edges of active plate boundaries, such as the Andes and Himalayas. These long, linear chains of mountains

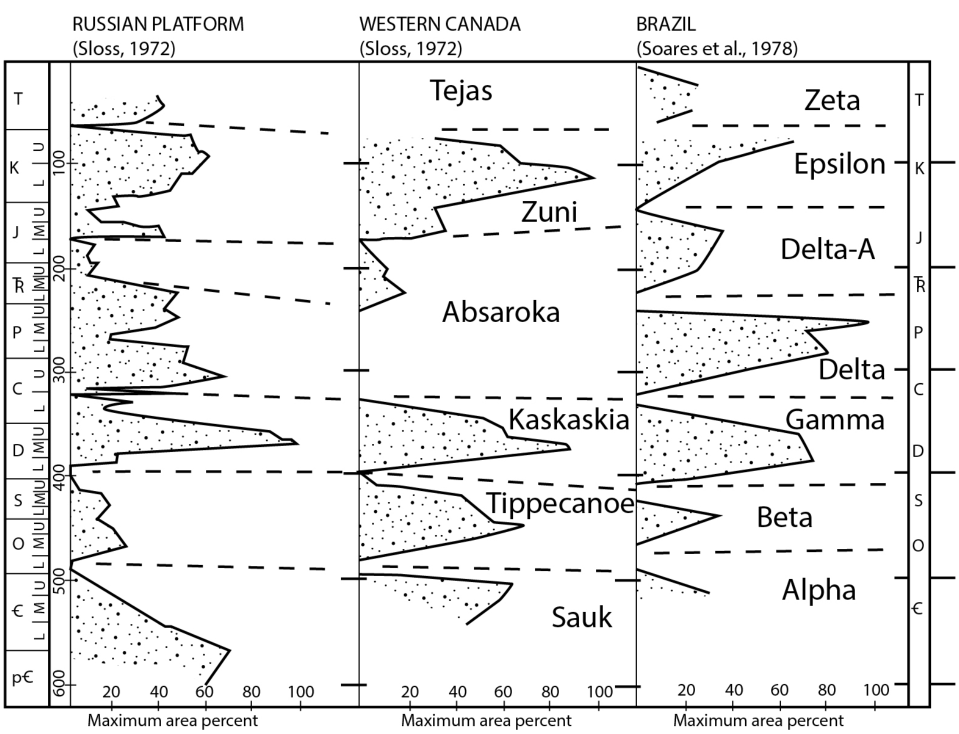

Figure 3. Published correlation of megasequence boundaries from North America, the Russian Platform of Europe and South America (Sloss 1972; Soares et al. 1978).

run parallel and in close proximity to many convergent-style plate boundaries.

Other proposed Flood models cannot account for the chemical and mineralogical differences in the magmas at convergent boundaries, like Mount St. Helens, and those that form elsewhere, like the less explosive and silica-poor Hawaiian-type magmas. Plate tectonics provides a reason for these systemic magma differences that other explanations cannot. That may be why so many creation geologists accept plate tectonics, or better, catastrophic plate tectonics. No theory or hypothesis, other than plate tectonics, can explain so many global geological observations.

However, plate tectonics cannot explain everything. There are still unresolved issues. For example, plate tectonics can only explain the creation of new oceanic lithosphere and the complete destruction of older (pre-Flood) oceanic lithosphere. Plate tectonics does not explain the origin of massive amounts of continental crust, such as the supercontinent Pangaea. Day 3 of Creation Week is still the best explanation for the origin of the continents.

In stark contrast to today's plate rates of a few centimeters per year, many Flood geoscientists think the plates moved much more rapidly during the Flood event, at rates of meters per second. Complex computer models by John Baumgardner (1986; 1990; 1994a; 1994b; 2003) have shown that this type of movement is possible and that catastrophic plate tectonics is the likely cause of the world's continents separating from their pre-Flood configuration. His discoveries led to a completely new perspective on the mechanics of the Flood, now called catastrophic plate tectonics (CPT).

Baumgardner (1986) was the first to suggest runaway subduction as a key mechanism responsible for the great Flood. He pointed out that the pre-Flood seafloor is entirely missing from the Earth's surface today and mist have been subducted during the year-long event and rapidly replaced with today's young igneous ocean crust. He explains:

> That no pre-Mesozoic ocean floor currently exists means that the entire pre-Flood oceanic lithosphere has been recycled into the mantle since the beginning of the Flood just a few thousand years ago (Baumgardner, 1986, p.8)

and

> In regard to the fate of the pre-Flood seafloor, there is strong observational support in global seismic tomography models for cold, dense material near the base of the lower mantle in a belt surrounding the present Pacific Ocean. Such a spatial pattern is consistent with subduction of large areas of seafloor at the edges of a continent configuration commonly known as Pangea (Baumgardner 1994a, p. 63).

This suggests that during the Flood, cold plates (original ocean lithosphere) were rapidly pulled down into the mantle, causing a thermal frictional envelope to develop around them by reducing viscosity (fluid-like thickness) in the mantle and "results in a sinking rate orders of magnitude higher than would occur otherwise." (Baumgardner 1994a, p. 64). Baumgardner found that once the older, colder, originally created oceanic crust and lithosphere began to subduct, it would speed up and drop into the less-dense hot mantle like a fishing weight in water. He referred to this as runaway subduction. He suggested rates of movement of meters per second, not centimeters per year as secular scientists like to suggest.

Baumgardner, keenly aware that the lab experiments had shown that stress, in addition to temperature, plays a crucial role in the strength of rock in the mantle, had by 2003 been able to improve his numerical techniques to the point of actually modeling the runaway phenomenon in an accurate manner, including the effects of stress weakening (Baumgardner 2003). The astonishing discovery of those numerical experiments was that, when runaway begins adjacent to a subducting slab, the weakened zone spreads to encompass the entire mantle, causing the flow speeds to increase by many orders of magnitude throughout the mantle, not merely within the envelopes immediately surrounding the sinking plates (Baumgardner 2003, his figure 2).

Evolutionary geologists reject the idea of runaway subduction. They insist that the plates have always moved at today's slow rates, employing their philosophy of uniformitarianism. It's not that they have found any mistakes in Baumgardner's math—on the contrary, his math is correct—or in his computer models, they just flat out don't believe it. So, they ignore his results and his powerful computer model and his math. They refuse to consider the validity of runaway subduction because it suggests a global catastrophe like the one described in the Bible.

Empirical data, independent of the chronostratigraphic timescale, demonstrate that the modern ocean lithosphere was completely created new in conveyor belt fashion at the ridges during the Flood, causing systematic spreading in both directions. In the 1950s and 1960s, geologists discovered that the ocean crust is very young compared to many of the rocks on the continents (Fig. 4). In fact, the oldest ocean crust only goes back to the Jurassic and Triassic system, a point about midway through the Flood (Absaroka megasequence). Recall that at every ocean ridge, the crust gets systematically older in both directions. Although evolutionary ocean floor maps claim ages in millions of years, they do seem to be correct in a relative sense (Baumgardner 2012; Humphreys 2000; Snelling 2010a). In addition, a tremendous amount of data affirms seafloor spreading independent of absolute dating methods.

Consider a few examples. First, the temperatures recorded from wells drilled in the ocean crust and the heat flow measured near the ocean ridges show a systematic pattern of cooling with distance from the ridges in both directions. Sclater and Francheteau (1970) originally defined a relationship between heat flow and distance from the ocean ridge that still holds true today. This is why the ocean ridges are elevated above the surrounding deep ocean basins. This empirical data set is not dependent on any dating methods, absolute or relative. And the ubiquitous nature of ocean ridges in every ocean suggests a common origin for all of the ocean crust (lithosphere). The creation of new ocean lithosphere at the ridges is exactly what Harry Hess (1962) proposed.

Second, magnetic reversal stripe patterns show a well-defined symmetry on each side of the ocean ridges, supporting simultaneous seafloor spreading outward in both directions from the ridges. The patterns initially observed by Heirtzler et al. (1966) for the ridge southwest of Iceland show a near-perfect symmetry for 200 kilometers in both directions about the ridge. The raw, magnetic anomalies are based only on distance from the ridges and not on the evolutionary ages of the rocks. The same relative patterns are found in every ocean also. Besides seafloor spreading, what other mechanism can explain these symmetrical magnetic patterns?

Third, seismic tomography data strongly suggest runaway subduction occurred recently (Fig. 5). The internal images of the mantle (tomography) show clear oceanic lithosphere descending 700 km and more beneath ocean trenches and into the mantle rocks

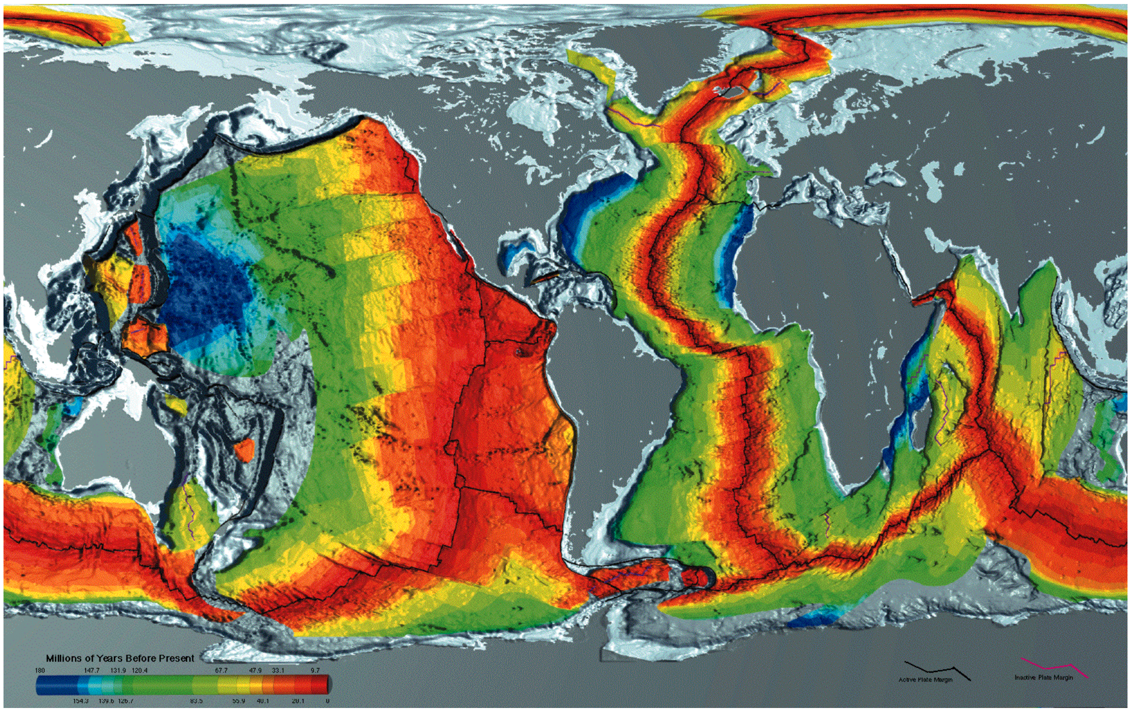

Figure 4. Map of the age of the seafloor showing uniformitarian absolute ages (Public domain, source NOAA). Red, orange and yellow show the seafloor created during the Tejas megasequence (Cenozoic), in increasing age. Green and blue show the older Zuni and Absaroka seafloor, in increasing age. There is no seafloor in existence older than Absaroka.

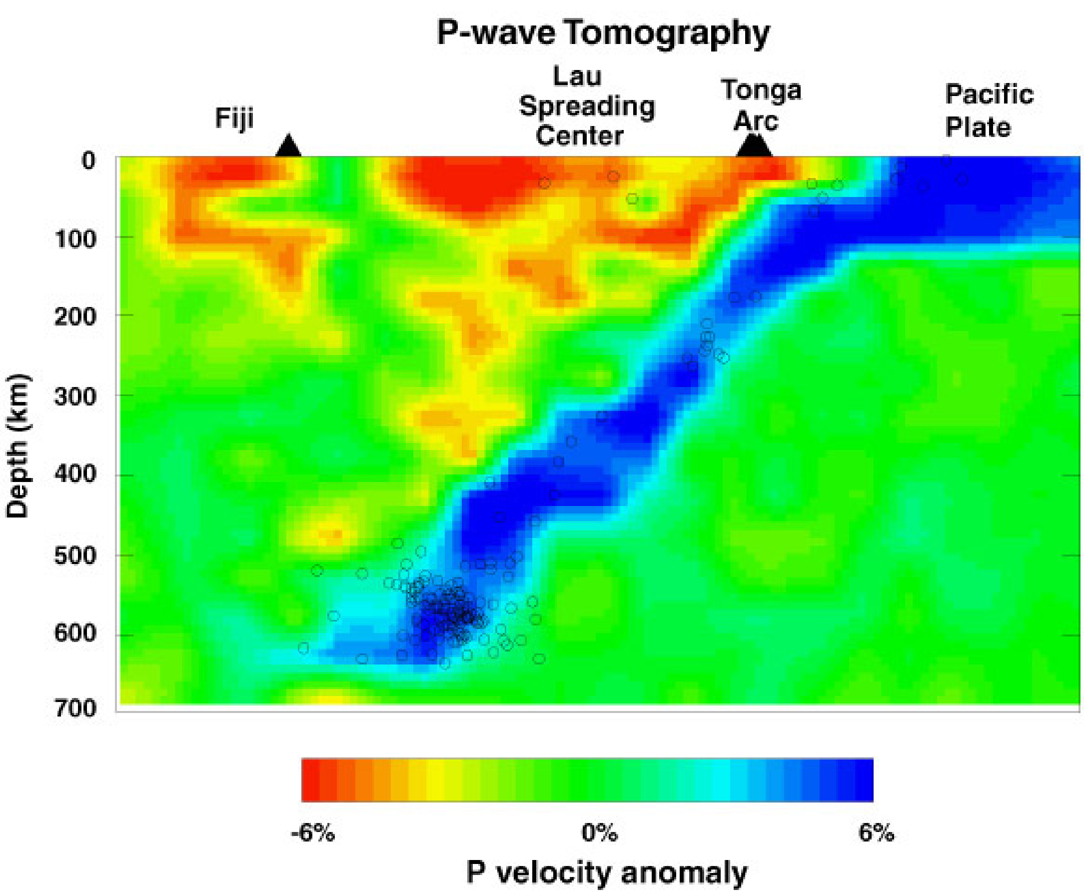

Figure 5. Seismic tomography across the Tonga trench (after Zhao et a. 1997). The blue shows colder ocean lithosphere descending into the mantle to a depth of nearly 700 km. The small circles represent earthquake foci. Image credit: Copyright © American Association for the Advancement of Science. Adapted for use in accordance with federal copyright (fair use doctrine). Usage by ICC does not imply endorsement of copyright holder.

(Schmandt and Lin 2014). The apparently cooler temperatures exhibited by these subducted slabs create a thermal dilemma for uniformitarian and old-earth geologists, who must demonstrate how these slabs remained cold for millions of years. Colder, subducted slabs are best explained by runaway subduction just thousands of years ago (Baumgardner 1994a; Clarey 2020).

Fourth, correlation of oil samples from offshore eastern South America and West Africa show demonstrable chemistry similarities when the continents are reunited (Fig. 6) (Brownfield and Charpentier 2006). The matching and unique chemistry in the oil families found on opposite sides of the Atlantic Ocean can only reasonably be explained by post-depositional plate movement. The geochemical differences found in the oils from north to south along the coasts depend on the uniqueness of the source rocks themselves and not the age of the rocks. These data indicate similar source rocks were deposited at the same time in different locations up and down the coasts of both continents that were later separated by plate motion.

In addition, there is observable evidence within most mountain ranges for active or past subduction. Mountain chains like the Himalayan Mountains, Rocky Mountains and Appalachian Mountains contain ample evidence of past explosive volcanism, with an extrusive rock chemistry similar to the modern Cascade volcanoes. These extinct volcanoes produced huge volumes of ash and lava which can still be mapped. Yet, these three ranges have no active stratovolcanoes today. Why? Because there is no current subduction activity beneath these mountain chains to produce the necessary magma. Without active subduction, there is no active volcanism. Whereas, in mountain chains where subduction is still transpiring, for example beneath the Andes Mountains and the Cascade Mountains, we find modern eruptions of stratovolcanoes. Other than CPT, no other Flood mechanism can explain why some mountains have active volcanism while other mountain ranges only have extinct volcanoes. Nor can any other mechanism explain the explosiveness and the unique silica-rich chemistry of the subduction zone volcanoes in these ranges. Most volcanoes across the ocean basins are less explosive, basaltic magmas, like the Hawaiian Islands. Volcanoes are heavily influenced by the chemistry of the magma. And magmas are generated in different ways. We will see later that it was the special chemistry of the magmas generated at subduction zones, caused by partial melting of the subducting lithosphere, that fueled the explosive stratovolcanoes necessary to produce global cooling for the Ice Age.

Finally, real rock evidence for catastrophic plate movement and frictional melting in subduction zones has been found at plate boundaries (Clarey et al. 2013). All of these different types of evidence collectively testify of a real, global event that completely recycled the pre-Flood seafloor into the earth's interior, creating a new world geography, separating the continents, and leaving behind billions of fossils as evidence of the catastrophic conditions that took place during the year-long biblical Flood.

IV. RESULTS

All compiled stratigraphic columns and megasequence boundaries were input by latitude and longitude into RockWorks. We created thickness and extent maps for each of the megasequences across all five of the continents from the stratigraphic columns and surface geologic maps of each continent or country (Figures 7-12). We used

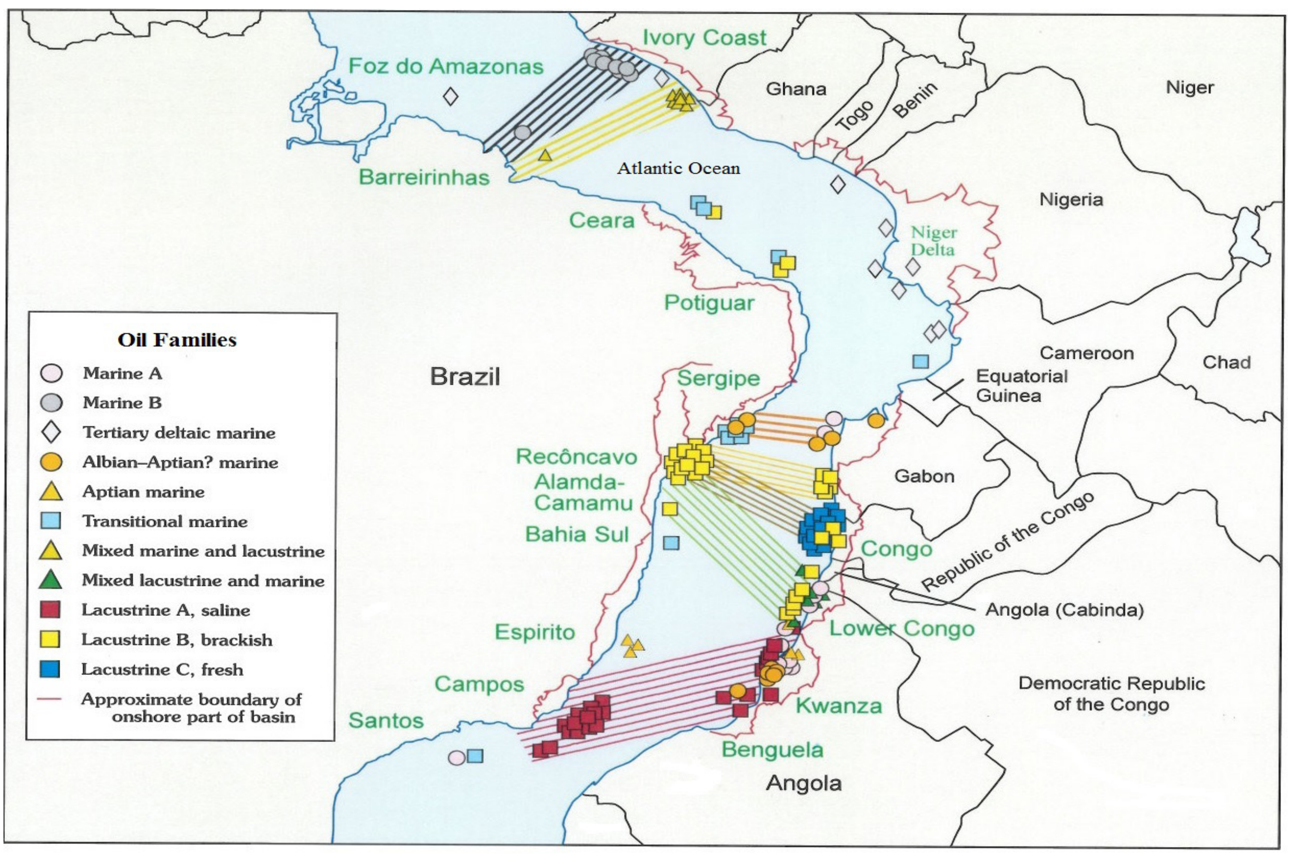

Figure 6. Map of the South Atlantic showing the correlation of oil families between Brazil and West Africa (Brownfield and Charpentier 2006).

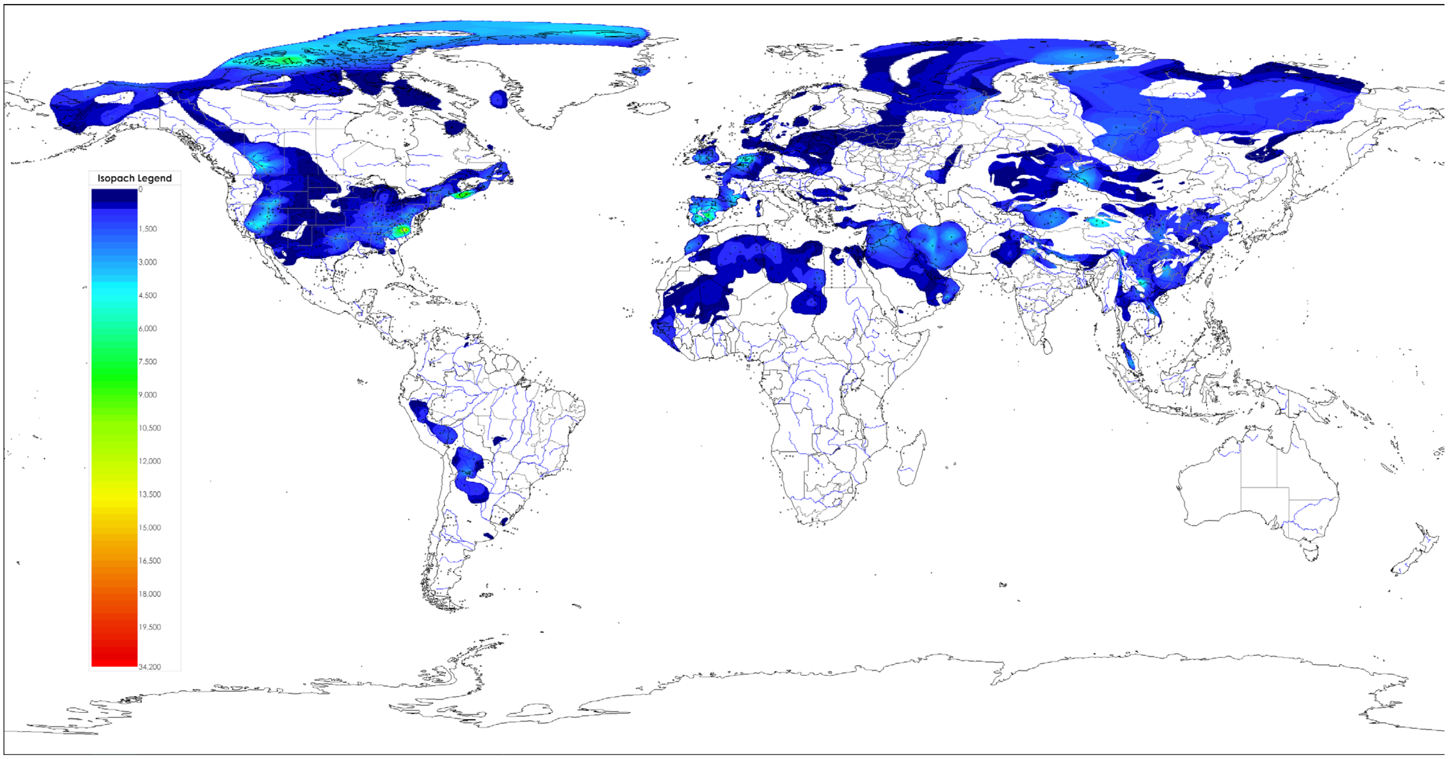

Figure 7. Sauk megasequence isopach (thickness) and extent map across North and South America, Europe, Africa and Asia. Measurements in meters.

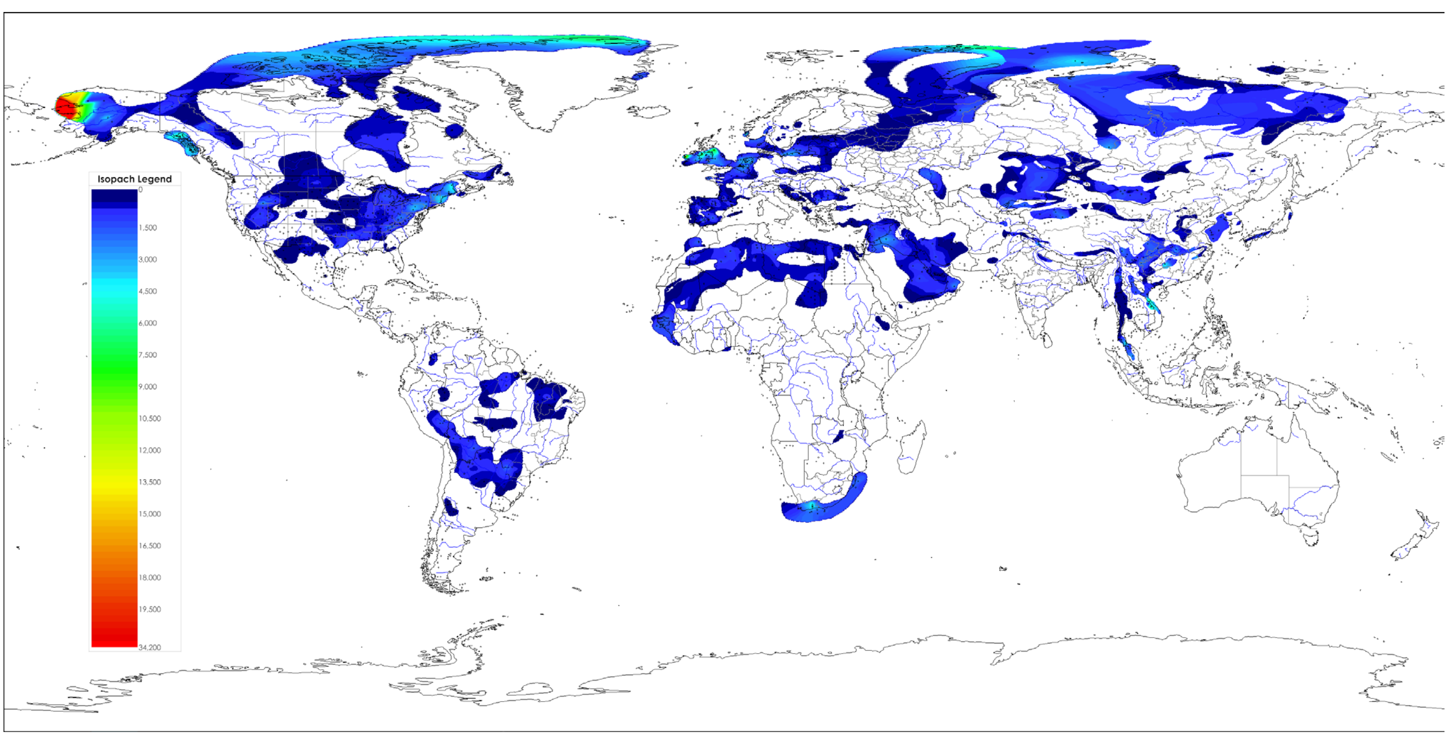

Figure 8. Tippecanoe megasequence isopach (thickness) and extent map across North and South America, Europe, Africa and Asia. Measurements in meters.

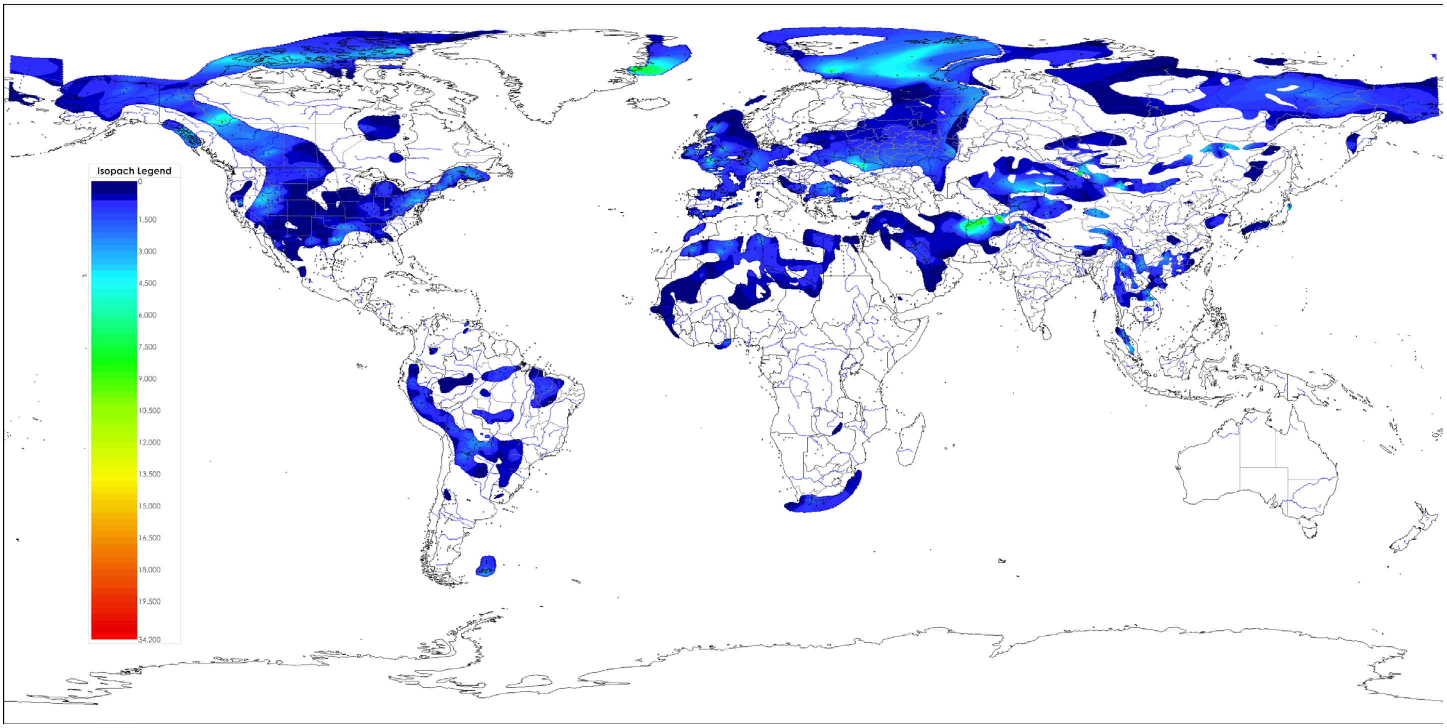

Figure 9. Kaskaskia megasequence isopach (thickness) and extent map across North and South America, Europe, Africa and Asia. Measurements in meters.

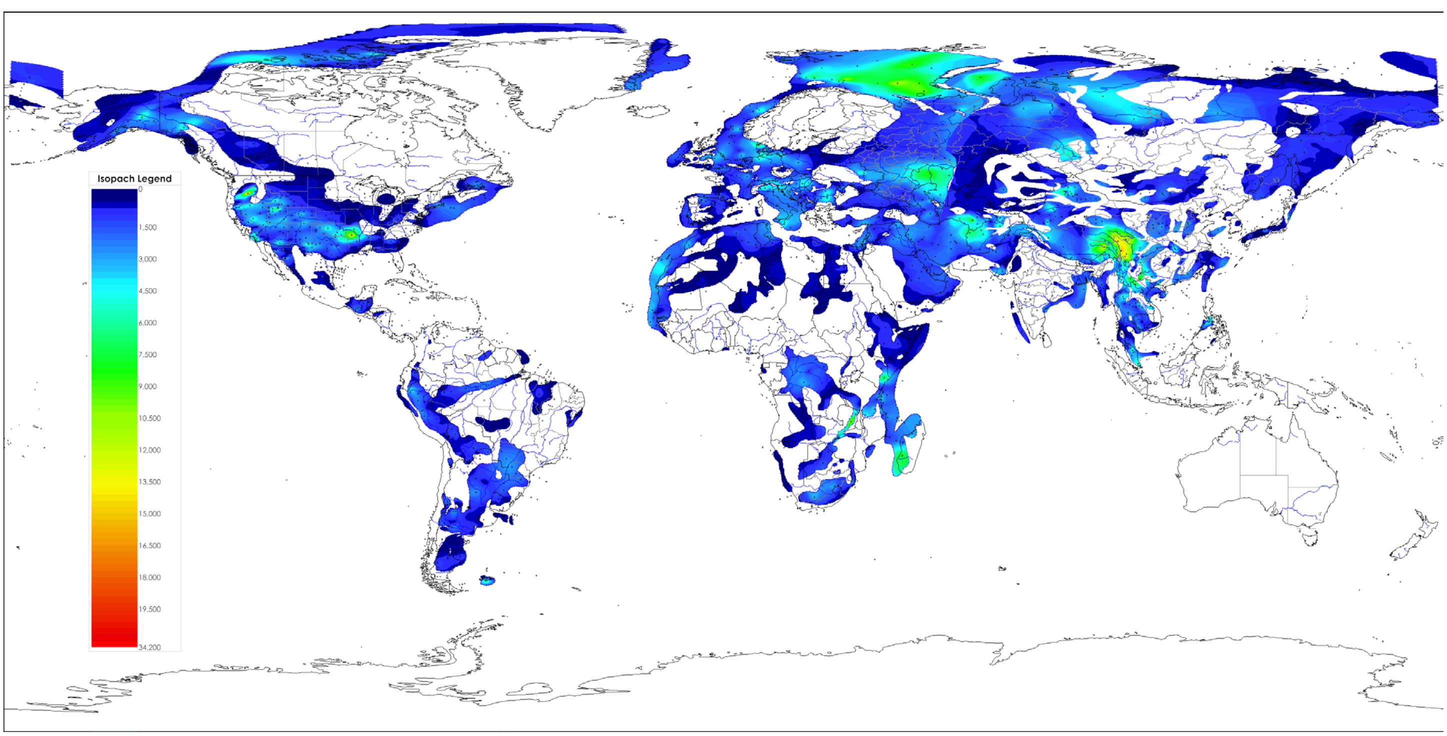

Figure 10. Absaroka megasequence isopach (thickness) and extent map across North and South America, Europe, Africa and Asia. Measurements in meters.

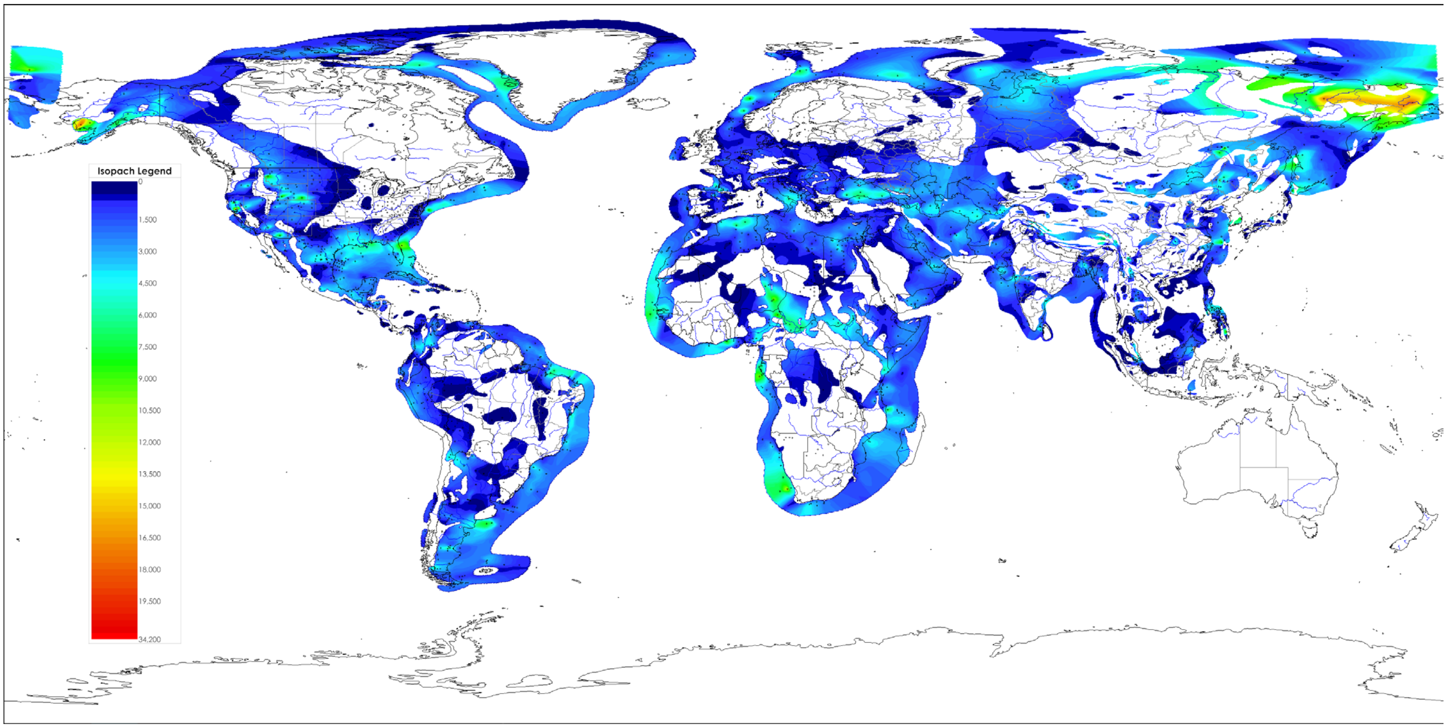

Figure 11. Zuni megasequence isopach (thickness) and extent map across North and South America, Europe, Africa and Asia. Measurements in meters.

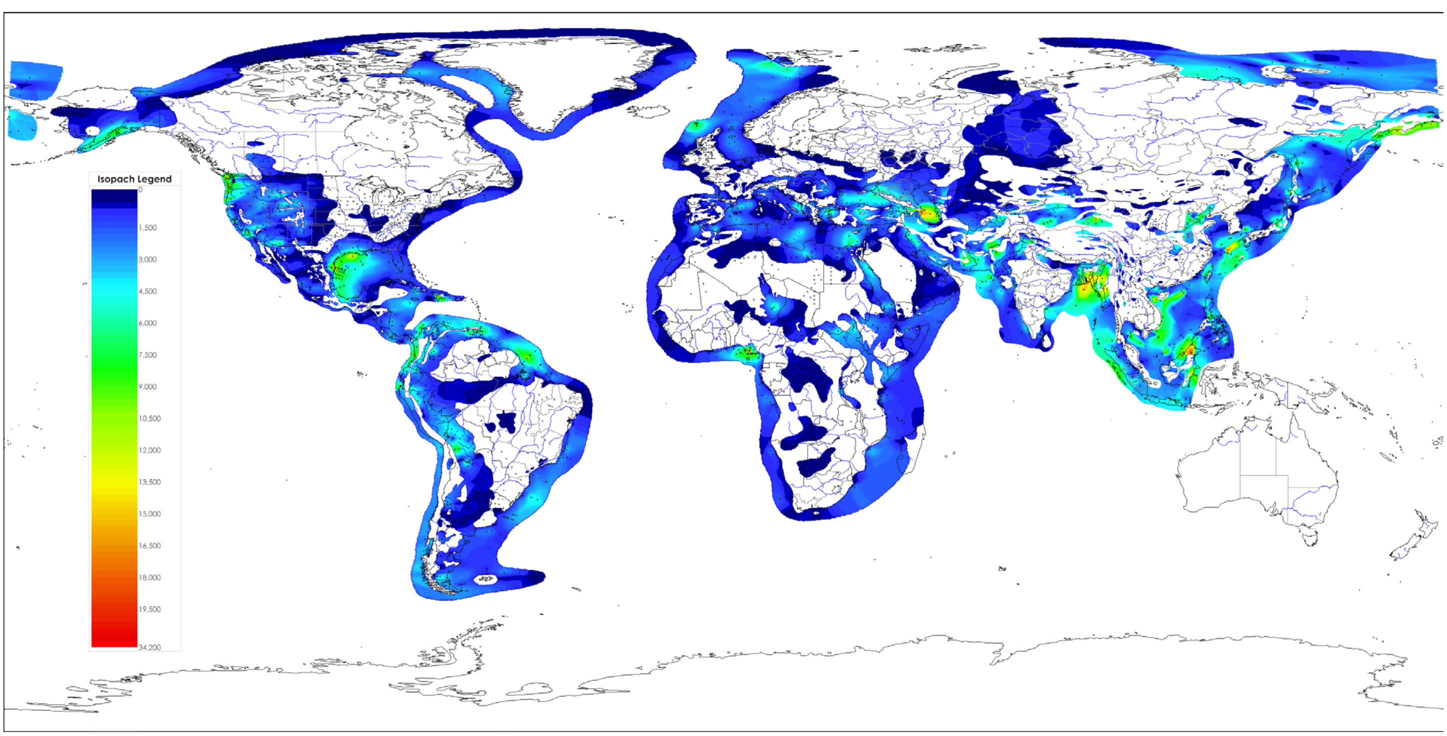

Figure 12. Tejas megasequence isopach (thickness) and extent map across North and South America, Europe, Africa and Asia. Measurements in meters.

a modern continental configuration for easier comparison of the megasequences through the Flood year.

We also created basal lithology (rock type) maps for teach of the megasequences. We assumed the basal layer would be the best-preserved unit in each megasequences and give us the most accurate sedimentological information for the start of each new megasequence. Many megasequences were found to begin with a sand-rich layer at the base, but that was not always the case.

Once we had the extent and thickness maps for each megasequence across each continent, we used RockWorks to compile the total rock volume and surface area for each continent and also for each megasequence (Table 1). This included totals for the five continents combined. All rock volume data are recoded in cubic kilometers. Surface areas are reported in square kilometers.

Thickness and extent maps for each of the six megasequences across the continents, and the total volumes in each megasequence, demonstrate that the earliest three megasequences exhibit the least areal extent and lowest sedimentary volume (Figs. 7-9 and Table 1). Subsequent megasequences (Absaroka and Zuni; Figs. 10-11), show significantly more land coverage and more sediment volume. Most continents show a maximum peak in both coverage and volume in the last few megasequences. Differences may be related to the pre-Flood topography (Clarey 2019b). For this reason, we created a new diagrammatic sea level curve that better matches the rock data (Fig. 13).

We also constructed a graph of the percent volume deposited by megasequence (Fig. 14) and a graph of the percent total surface area covered by each megasequence across the five continents (Fig. 15).

V. DISCUSSION

A. New Global Sea Level Curve

Vail et al. (1977) first identified global sea level as the dominant driving mechanism for megasequence development. Megasequences are thought to have formed as sea level repetitively rose and fell, resulting in flooding of the continents up to six times in the Phanerozoic (Sloss 1963). Upper erosional boundaries were created as each new sequence eroded the top of the earlier sequence as it advanced. The result was the uniformitarian global sea level curve for the Phanerozoic (Fig. 1).

To construct this curve, Vail et al. (1977) and Haq et al. (1988)

Table 1. Surface area (km^2), volume of sediment (km^3), and average thickness (km) by individual continent and by individual megasequence, including total values for all five continents. Surface area totals and average thickness totals are affected by overlap and/or missing megasequences.

Surface Area (km^2)	North America	South America	Africa	Europe	Asia	Total
Sauk	12,157,200	1,448,100	8,989,300	5,149,800	17,775,800	45,520,200
Tippecanoe	10,250,400	4,270,600	9,167,200	5,208,200	11,881,100	40,777,500
Kaskaskia	11,035,000	4,392,600	7,417,500	8,121,900	16,262,800	47,229,800
Absaroka	11,540,300	6,169,000	17,859,900	11,401,700	28,733,900	75,704,800
Zuni	16,012,900	14,221,900	26,626,900	9,940,300	33,162,200	99,964,200
Tejas	14,827,400	15,815,200	24,375,100	9,568,000	34,187,200	98,772,900
Total	26,572,700	20,965,800	35,591,100	18,272,600	59,229,500	160,631,700
Volume (km^3)	**North America**	**South America**	**Africa**	**Europe**	**Asia**	**Total**
Sauk	3,347,690	1,017,910	6,070,490	4,251,000	18,730,330	33,417,420
Tippecanoe	4,273,080	1,834,940	6,114,910	3,236,310	9,118,960	24,578,200
Kaskaskia	5,482,040	3,154,390	3,725,900	10,387,180	15,733,730	38,483,240
Absaroka	6,337,270	6,073,710	21,222,750	26,682,700	48,596,470	108,912,900
Zuni	16,446,210	23,202,680	57,756,300	16,160,960	78,157,140	191,723,290
Tejas	17,758,530	32,973,060	28,855,530	18,936,550	92,732,160	191,255,830
Total	68,138,990	70,481,840	140,121,460	83,003,340	282,912,980	644,658,610
Average Thickness (km)	**North America**	**South America**	**Africa**	**Europe**	**Asia**	**Total**
Sauk	0.275	0.703	0.675	0.825	1.054	0.734
Tippecanoe	0.417	0.430	0.667	0.621	0.768	0.603
Kaskaskia	0.497	0.718	0.502	1.279	0.967	0.815
Absaroka	0.549	0.985	1.188	2.340	1.691	1.439
Zuni	1.027	1.631	2.169	1.626	2.357	1.918
Tejas	1.198	2.085	1.184	1.979	2.712	1.936
Total	2.564	3.362	3.937	4.543	4.777	4.013

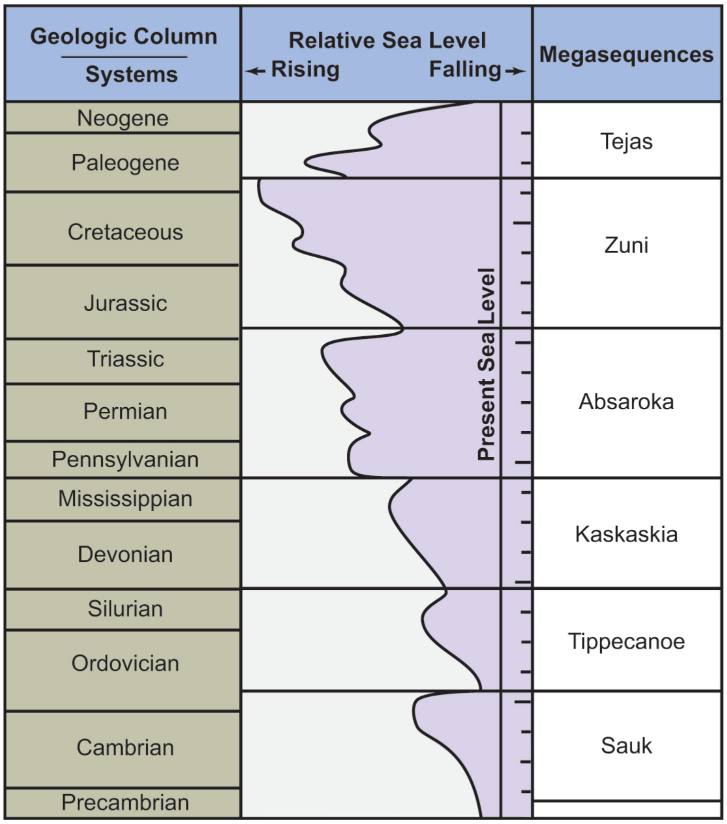

Figure 13. Progressive Flood model (diagrammatic) sea level curve and megasequences chart. The sea level changes shown are relative, therefore no scale is given.

relied on geohistory analysis and biostratigraphic data and paleoenvironmental interpretations across selected continental margins. And of course, they used the uniformitarian environmental interpretations as a guide also. Their result shows the highest sea levels were reached in the Ordovician and in the Late Cretaceous. It is significant to note that Vail and Mitchum (1979) have acknowledged that their sea-level changes from the Cambrian through Early Triassic are not as well constrained as those from the Triassic upward.

As mentioned above, their uniformitarian sea level curve is based on evolutionary, deep-time environmental interpretations of many sedimentary units. For example, most conventional geologists believe the Coconino Sandstone in the American Southwest was deposited on dry land, implying global sea level was lower during its deposition. In contrast, Whitmore et al. (2014) have demonstrated rather conclusively that the Coconino Sandstone was deposited under marine conditions. Therefore, sea level was likely much higher during its deposition (during the Absaroka megasequence) than what is shown on the uniformitarian sea level curve (Fig. 1).

Some critics have tried to explain this apparent progressive flooding pattern as a product of differential erosion. They assume there was more erosion of the older stratigraphic units, and correspondingly, less erosion in the upper or younger layers. But is this really true? Or is it a merely a matter of the lack of depositional extent of the earliest megasequences?

Snelling (2014b), discussing the paper by Holt (1996), acknowledged that there is a disproportionate amount of Cretaceous (Zuni, Fig. 11) and Tertiary (Tejas, Fig. 12) sediment preserved in the rock record globally, compared to earlier deposits (Sauk through Absaroka, Figs.7-10, and Table 1). However, Snelling (2014b) reasoned that it is impossible to know how much volume of the earlier megasequences may have been eroded and possibly redeposited as Cretaceous and Tertiary strata. As a consequence, he reasoned that the limited amounts of Sauk, Tippecanoe and Kaskaskia strata found across North America were likely greatly reduced by erosion during the later phases of the Flood.

The values in Table 1 show that the Sauk, Tippecanoe and Kaskaskia megasequences consistently preserve the least total sedimentary volumes across all continents, compared to the three subsequent megasequences. Some of the volume data shown in Table 1 have undoubtedly been reduced by later erosion, but exactly how much is uncertain. In spite of this uncertainty, it is likely the Sauk megasequence has preserved at least a reasonable proportion of the original extent and possibly volume deposited because we see consistent patterns in the surface coverage of the Sauk, Tippecanoe and Kaskaskia megasequences on all five continents in this study (Figs. 7-9).

Admittedly, it is difficult to determine exactly how much erosion may have occurred if the material is now presumably missing. But, if there were lots of earlier erosion that reduced the volume of all pre-Absaroka strata significantly, there should still be evidence to observe. Each continent shows a dramatic increase in volume and areal extent in the Absaroka megasequence (Fig. 10) and even more in the Zuni and Tejas megasequences (Figs. 11-12). In fact, if we look at a graph of the percent volume by megasequence for the five continents we see that the Zuni alone has 32.6% of the global total Phanerozoic sediment volume (the Tejas has 32.5%) (Fig. 14).

Furthermore, the argument that all earlier strata were significantly reduced by erosion caused by mountain-building near the end of the Flood can be countered by several observations. First, the consistent internal stratigraphy of each megasequence testifies against significant erosion. Megasequences often start out with sandstone followed by shale and then carbonate rock. For example, the Sauk in North America still exhibits a complete cycle consisting of basal sandstone (Tapeats equivalent), followed by shale (Bright Angel equivalent) and topped by a carbonate (Muav equivalent). Vast erosion in between each megasequence cycle would have likely destroyed this systematic signature in many locations, if not totally. And yet we observe the complete sequence of sandstone, shale and carbonate in the Sauk megasequence across large portions of North America.

Secondly, we do not observe significant numbers of reworked early Paleozoic fossils and mixed fossil debris in younger, Absaroka, Zuni and Tejas strata. Massive late Flood or post-Flood erosion should have transported vast amounts of fossil material and microfossils from the earlier megasequences, mixing them into younger sediments so that the fossil patterns would be less discernable in the later megasequences. This is not what is observed. The pattern of sudden appearance, stasis, and sudden disappearance of fossils is prevalent throughout the entire Phanerozoic sedimentological record, Sauk through Tejas (Wise 2017). Reworking significant amounts of fossils would likely have blurred this pattern.

Third, there was a lack of Cenozoic mountain-building in Africa to erode and serve as a major source of Tejas sediment. North and South America have the Cenozoic-age Rocky Mountains and Andes Mountains, respectively. Europe has the Alps. Asia has the Himalayan Mountains and many smaller mountain chains. These uplifts served

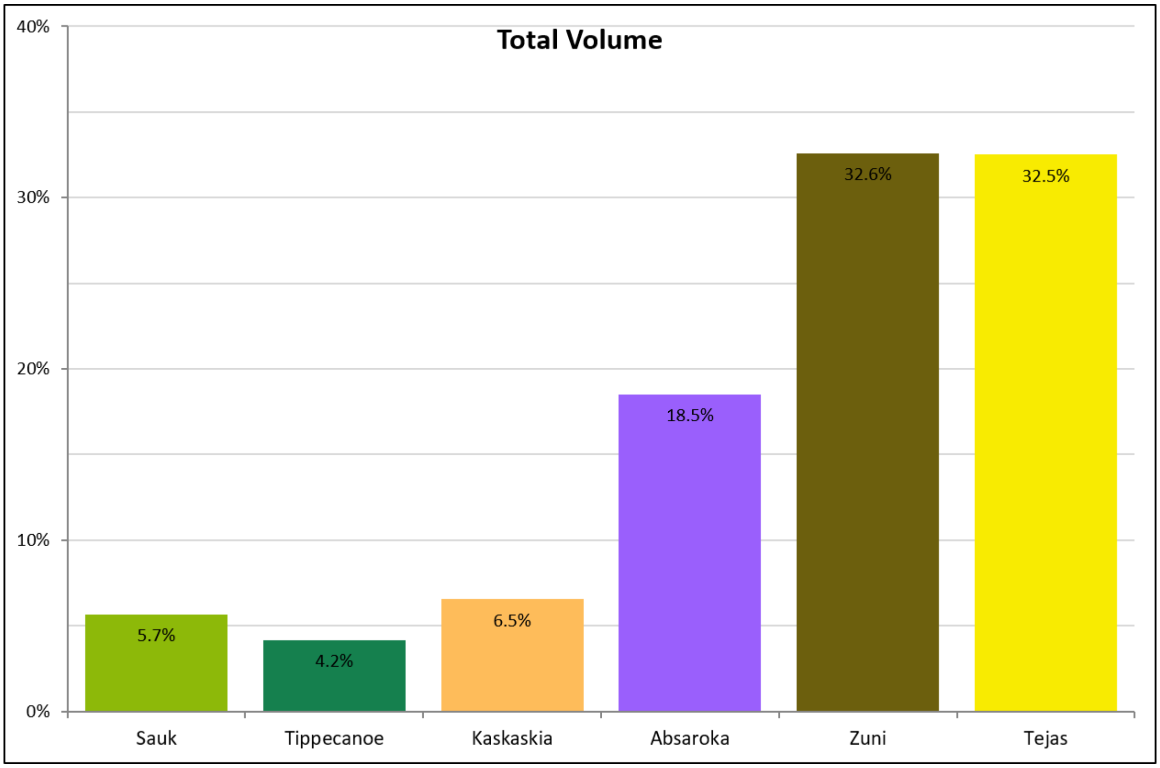

Figure 14. Graph of the percent sediment volume for each megasequence. The values represent the totals for all five continents.

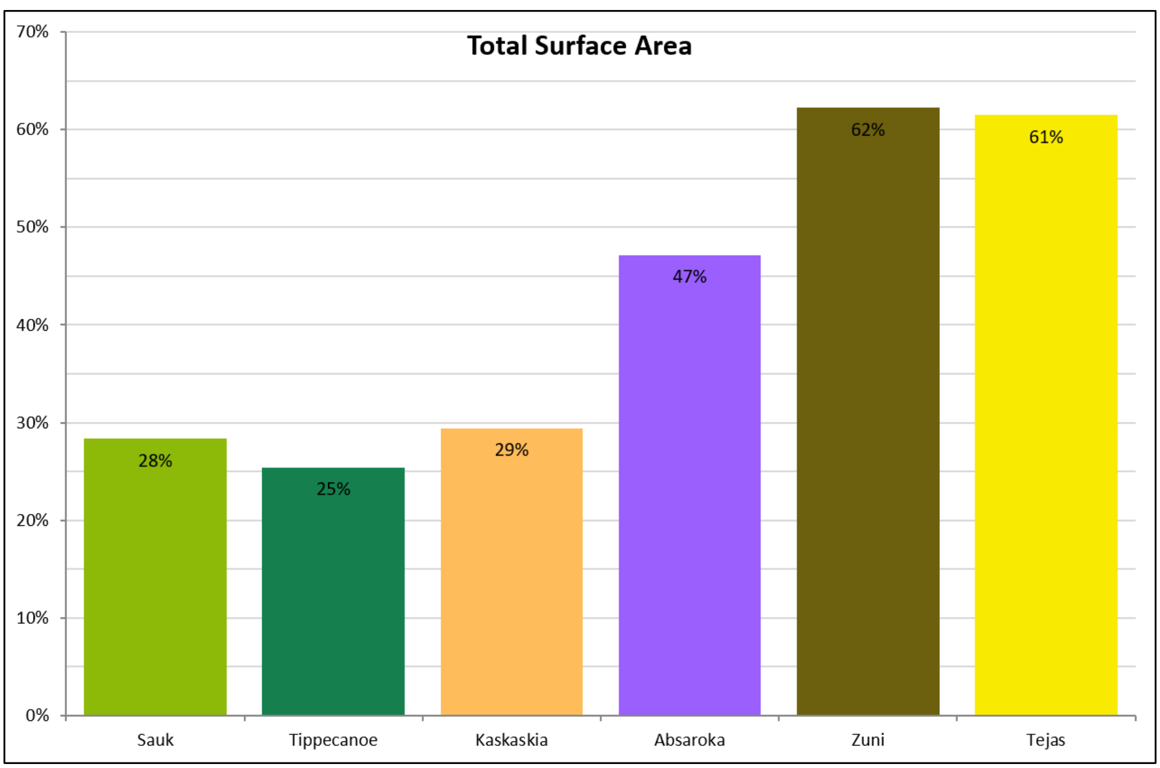

Figure 15. Graph of the percent of the total surface area covered for each megasequence. The values represent the totals for five continents.

as a major sediment source for the Tejas megasequence. And yet we see the same pattern of very limited extent and small volumes of Sauk through Kaskaskia, and tremendous amounts of Zuni and Tejas, across all continents. Why does Africa show the same location of deposition for the first three megasequences if this is all the result of random late Flood/post-Flood uplift and erosion? Erosion should have significantly reduced the extent of earlier megasequences, leaving many small remnants of the Sauk, Tippecanoe and Kaskaskia scattered everywhere across the continents in randomly distributed patterns. We do not see a random pattern. In fact, and even more compelling, is the observation that the early megasequences are confined to nearly the same identical locations across each of the five continents, and stack uniformly one on top of the other. This is the general rule for all five continents. Random erosion would not leave this consistent of a megasequence pattern across five continents.

Our study also found that all megasequences thin toward the crystalline shield areas on all continents (Fig. 16). In other words, the stratigraphic units do not show evidence of massive erosion and truncation. Instead, they all thin in the direction of the now exposed shields, implying they were originally deposited thinly in these areas right from the start and are not a simple consequence of erosion. Figure 16 shows four stratigraphic profiles across the northern USA. All show dramatic thinning of the megasequences from south to north toward the Canadian Shield, in support of this interpretation.

In addition, these four profiles (Fig. 16) show the improbability that erosion by the receding water (or post-Flood) phase of the Flood could serve as an explanation for the limited amounts of Sauk, Tippecanoe and Kaskaskia we observe. Figure 16 shows that the rocks of the Absaroka and Zuni megasequences cover and protect the earlier megasequences, preventing their late Flood or post-Flood erosion. Therefore, the simple argument that late massive erosion can be used to explain the megasequence patterns we observe can be put to rest.

B. Starting Configuration: Pangaea

Before we present our progressive Flood model, we have to establish the most likely pre-Flood continental configuration. There are several competing ideas, but most Flood geologists accept either a Pangaea-like configuration (Baumgardner 2018; Clarey and Werner 2018b) or

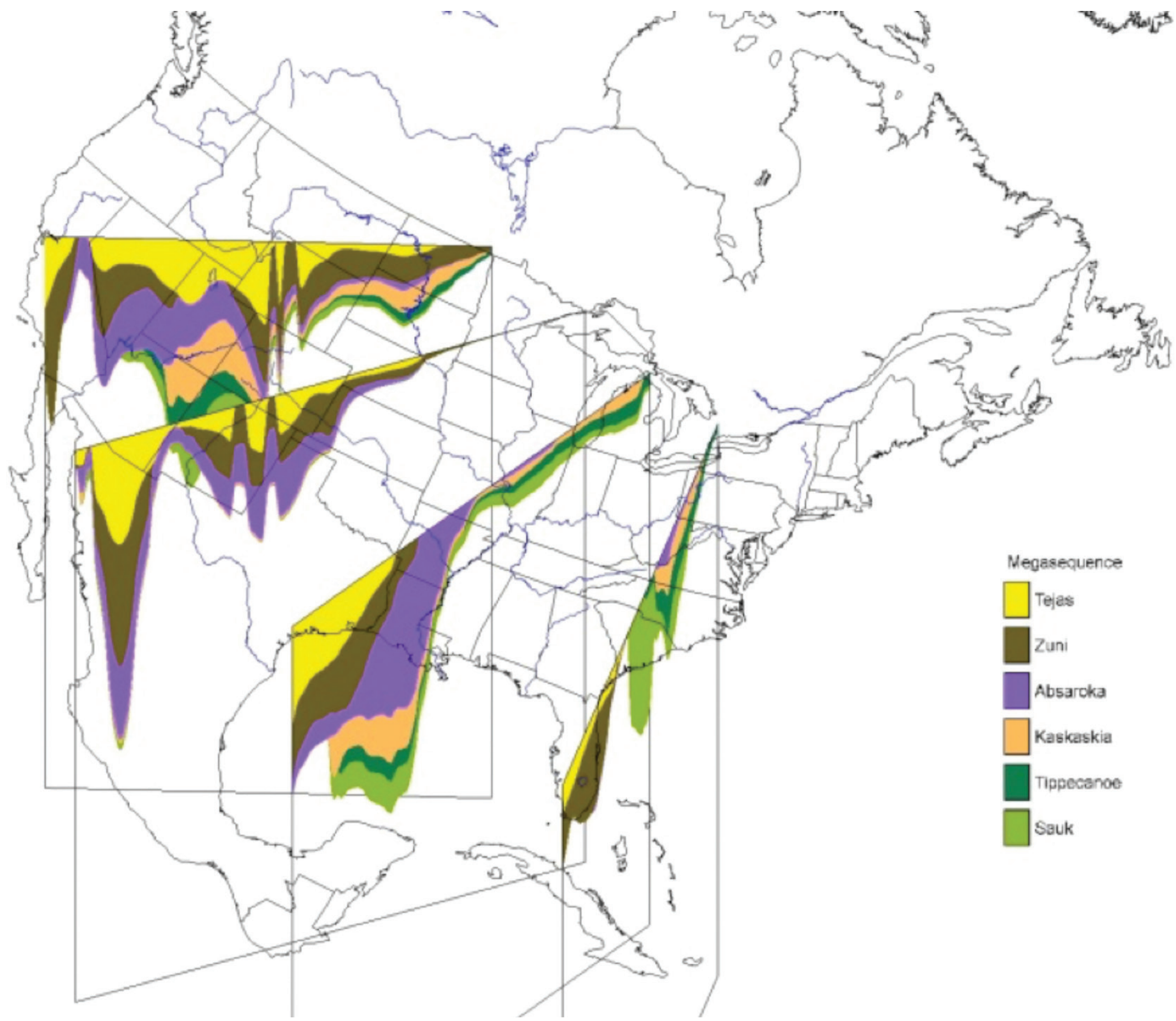

Figure 16. Stratigraphic cross-sections across North America showing the megasequences thinning toward the Canadian Shield (Clarey 2020).

a Rodinia configuration (Snelling 2014a). In the latter view, the pre-Flood world started as Rodinia and morphed into Pangaea midway through the Flood, and eventually broke apart again to the present continental configuration.

Conventional geologists have interpreted several pre-Pangaea supercontinents, including Gondwana (involving mostly the southern continents) and before that Rodinia. Gondwana is the so-called transitional continental configuration between Pangaea and Rodinia. Pangaea is claimed to have formed about 350 million years ago, Gondwana about 500 million years ago, and Rodinia about 900 million years ago, according to evolutionary dates (Campbell and Allen 2008).

In our earlier research on the pre-Flood continental configuration, we chose a slightly modified Pangaea because it has the most geological evidence supporting it, including the best fit of the current continents (Clarey and Werner, 2018b). We placed a narrow sea (300-500 km) between North America and Africa/Europe, allowing for limited plate subduction, an early Flood closure of the pre-Atlantic, and the formation of the Appalachian/Caledonian Mountains (Fig. 17). The width of this pre-Atlantic is based on subducted plate remnants that diminish beneath the Appalachians below 300 km, supporting this narrow-sea interpretation (Schmandt and Lin 2014). But the question about which pre-Flood configuration remains open. Is it Rodinia or Pangaea?

We have recently mapped out the extent of a massive amount of Precambrian salt-rich rocks in the Middle East, Pakistan and India (Clarey and Werner 2020) (Fig. 18). These various salt-rich units have been conventionally dated as Neoproterozoic, falling in the evolutionary age range of 540-950 million years old (Kadri 1995; Hughes et al. 2019). The Salt Range Formation has been described as a mass of unstratified halite with occasional thin dolomite beds, capped by both gypsum and anhydrite (Kadri 1995). Thicknesses of these various formations have been found to vary between 1800-3000 meters, including the non-halite units (Kadri 1995).

Finding thick salt-rich layers in rocks prior to the Cambrian is rather unusual. They may be sourced from the bursting of the fountains of the great deep in Genesis 7:11, but more research is needed. Regardless, the Precambrian salt-rich rocks are claimed by evolutionary geologists to be approximately the same age as Rodinia. Therefore, we used their extent to test the validity of the Rodinia reconstruction.

Figure 18 shows the modern extent and thicknesses of the salt-rich layers across the Middle East and southern Asia. These deposits are the source of the so-called 'Himalayan sea salt' mined today. Figure 19 shows the reconstructed salt-rich formations in a configuration similar to Pangaea. Figure 20 shows the approximate locations of these same salt deposits in a Rodinia reconstruction. It seems quite clear that the Pangaean reconstruction is the better fit (Fig. 19). This places the salt-rich rocks in the same approximate location spanning the northeastern Saudi Arabian Peninsula and the subcontinent of India. Unfortunately, Gondwana and Pangaea are very similar in the Southern Hemisphere, so it is difficult to differentiate the two. Nonetheless, they are both good matches for the Precambrian salt-rich units in the Middle East, Pakistan and India.

A Rodinia configuration shows a poor match of the salt deposits across this region (Fig. 20). We conclude that Pangaea (at least the southern part called Gondwana) was already in existence when these massive Neoproterozoic salt-rich rocks were deposited. This confirms and validates our earlier pre-Flood continental interpretation for the pre-Flood world that used a modified Pangaea (Clarey and Werner 2018b). Rodinia is merely a uniformitarian hypothesis that doesn't match well with the actual rock data.

According to CPT theory, the modern ocean floor was created when the original Creation Week seafloor was consumed by runaway

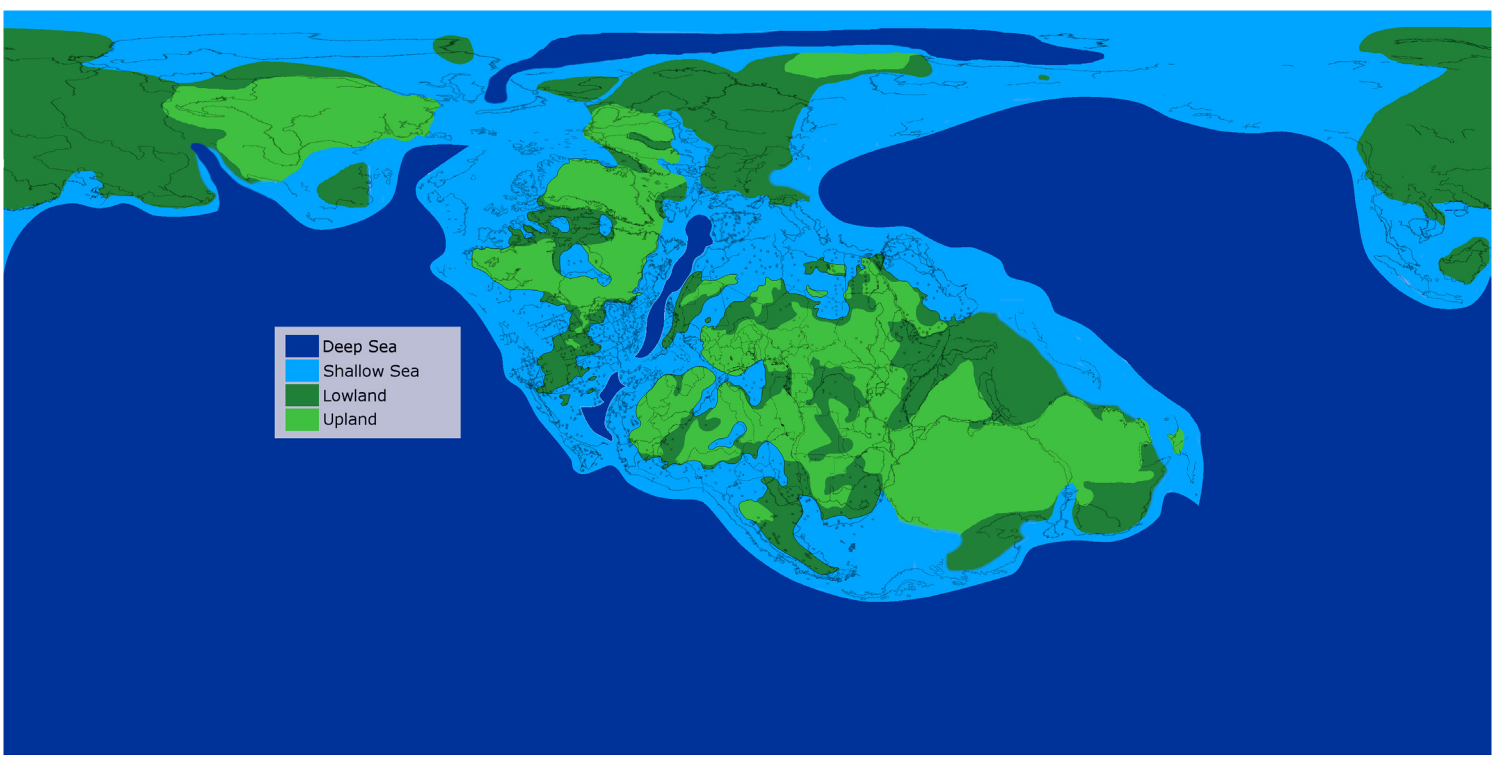

Figure 17. Map of the pre-Flood continental configuration showing basic interpreted environments.

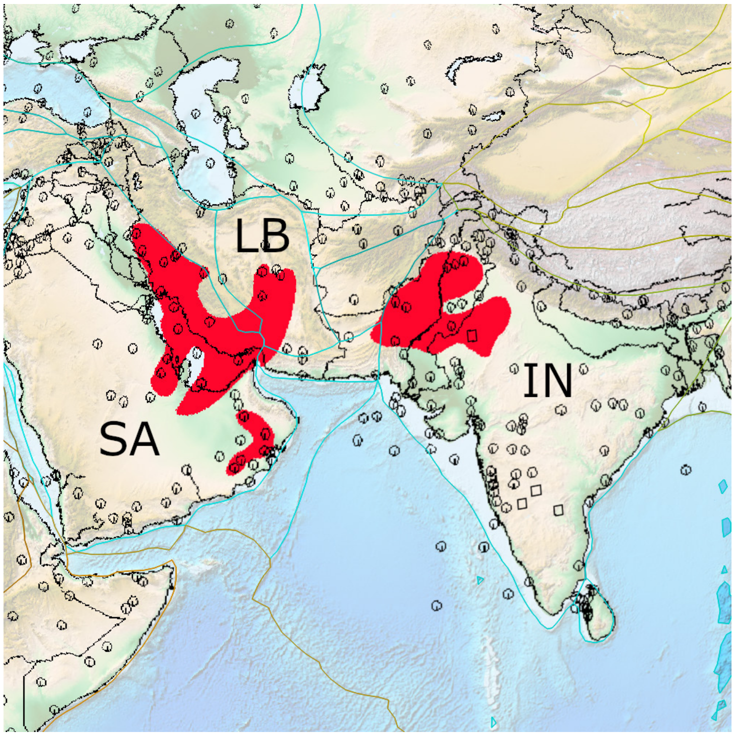

Figure 18. Present-day extent of the Precambrian salt deposits in the Middle East, Pakistan and India. Red represents the present extent of the salt deposits (Clarey and Werner 2020).

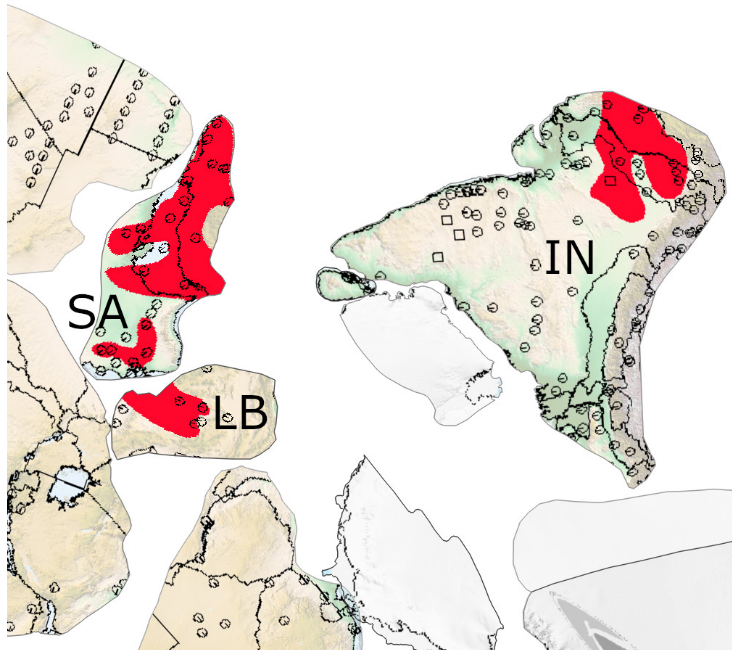

Figure 20. Extent of the Precambrian salt deposits in southern Asia in a Rodinia reconstruction. Red represents the present extent of the salt deposits (Clarey and Werner 2020).

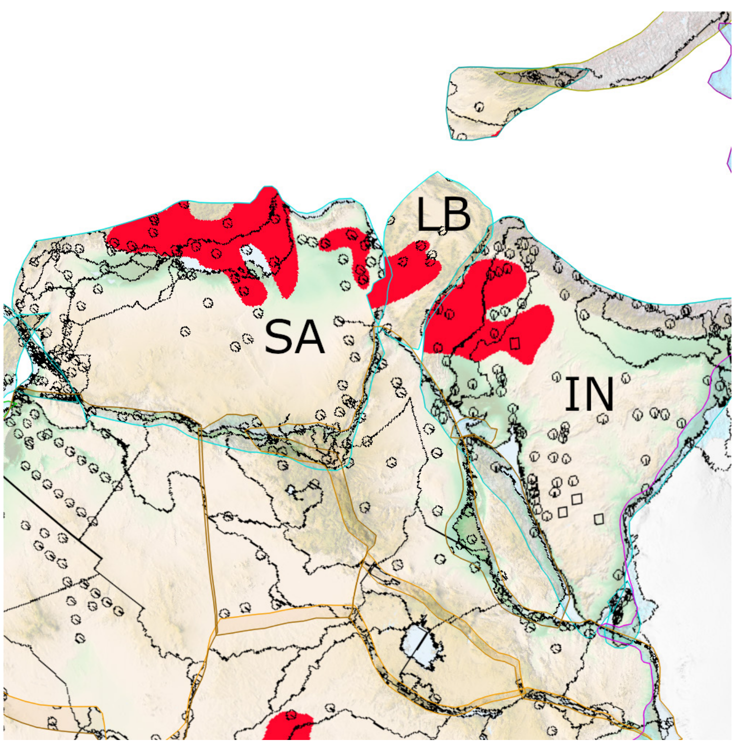

Figure 19. Extent of the Precambrian salt deposits in southern Asia in a Pangaea reconstruction. Red represents the present extent of the salt deposits (Clarey and Werner 2020).

subduction during the Flood. It was the density contrast of the heavy, cold, original ocean crust (the lithosphere) that allowed the runaway subduction process to begin and continue. It is essentially "gravitational energy driving the motion" of the plates (Baumgardner 2018). The "runaway" process continued until virtually all of the original oceanic lithosphere was consumed. There was no geophysical means or reason to stop the rapid plate motion until the density contrast was fully alleviated. At that moment, the newer, more buoyant lithosphere ceased subducting, bringing plate motion to a virtual standstill, giving the slow plate motion that is observed today.

In contrast, a pre-Flood world that resembled Rodinia requires the consumption of nearly all the pre-Flood ocean crust (lithosphere) twice. The first time to break-up Rodinia and the transformation into the supercontinent of Pangaea, and then a second time when Pangaea split into the present global configuration. Geophysically, the first breakup of Rodinia and reconfiguration into Pangaea would be possible, but it would also consume most, if not all, of the pre-Flood ocean crust. A second move would then be rendered impossible since the new, hot ocean crust created while splitting up Rodinia would not have enough of a density contrast to fuel a second episode of runaway subduction. As mentioned above, it is the consumption of the cold, more dense pre-Flood ocean crust (lithosphere) that caused runaway subduction in the first place (Baumgardner 2018). Therefore, if there had been a Rodinia, we would still be in a Pangaea continental configuration today.

C. The Progressive Flood Model

We present our Flood model in a day-by-day narrative of the Flood year. A significant amount of this material was taken from Johnson and Clarey (2021) and interspersed through the narrative. Other sections came from Clarey (2020). The geology, paleontology, tectonics, and the megasequences are added as appropriate within the narrative.

1. Initiation of the Flood to Day 10?

The Flood begins in Genesis 7:11 with the bursting of the fountains of the great deep and the windows of heaven were opened.

> Thus, the worldwide Flood began with two unprecedented and powerful actions (both of which are reported by **perfect** verbs, denoting event-like actions that were soon completed), with both of those actions providing floodwaters that would eventually cover the globe: (a) “all the fountains/wellsprings of great-deep” were “**burst**” by God; and (b) “windows of the heavens” were “**opened**” by God, so waters came geysering and gushing up from below—“great deep” places (perhaps from below the oceans and/or far below the Earth’s land surfaces)—as well as from the atmosphere, due to “windows” in the sky being “opened” (Johnson and Clarey 2021. p. 252).

Exactly what the “fountains” entailed is unclear from a geological standpoint. Here, we concur with Austin et al. (1994), that the bursting of the “fountains of the great deep” initiated the tectonic plates. It seems likely that the “fountains of the great deep” produced a lot of water/steam as do modern volcanoes. There would have been a lot of gasses released as the magma rose upward in the Earth, but exactly how high this water/steam shot up into the atmosphere is unclear. Tremendous amounts of water vapor escaping from the volcanic activity of the rifts likely contributed to the heavy rainfall for the first 40 days.

The initiation of vast rifts both on land and under oceans may be the primary geological event that occurred during the first 10 or so days of the Flood (Clarey 2020). There is a lot of geological evidence for the simultaneous development of multiple rift zones across the globe, including several along the edges of North America and possibly the Midcontinent Rift in the continental interior (Reed 2000; Clarey 2020, pp. 182-186).

In addition to volcanism, there was localized deposition of pre-Sauk sediments near many of these rifts, and along the pre-Flood continental margins. Fig. 21 shows the thickness and extent of the Pre-Sauk volcanic and sedimentary rocks across North America.

2. Days 10?-20? of the Flood

Genesis 7:12 mentions the 40 days and 40 nights of intense rainfall. The first 40 days of the Flood also likely included the start of plate motion as the originally-created cold and dense oceanic lithosphere began to subduct. This subduction process may have begun as early as Days 10-20 of the Flood year (Clarey 2020, pp. 194-215).

The first consequence of sudden plate movement would have been the generation of massive numbers of tsunami-like waves. Plate motion may have begun in a few selected locations, such as along the East Coast of North America and near Southeast Asia/Australia as cold oceanic lithosphere began to rapidly subduct into adjacent rifts. These movements generated the sediments of the Sauk megasequence, bringing the first tsunami waves across the continental crust. These waves spread sediment across the shallow seas that existed on the continents (Clarey and Werner 2018b). Many marine organisms were inundated at this time, creating the Cambrian Explosion as a blanket of sandstone was spread across vast regions of each of the continents.

Although several previous researchers have suggested that the Flood rose, flooded the whole Earth, and/or reached a peak about Day 40 or shortly thereafter (Whitcomb and Morris 1961; Barrick and Sigler 2003; Snelling, 2009; Dickens and Snelling 2015), we disagree. And we especially disagree with the interpretation that all vertebrate fossils were somehow dissolved by acidic waters released by the

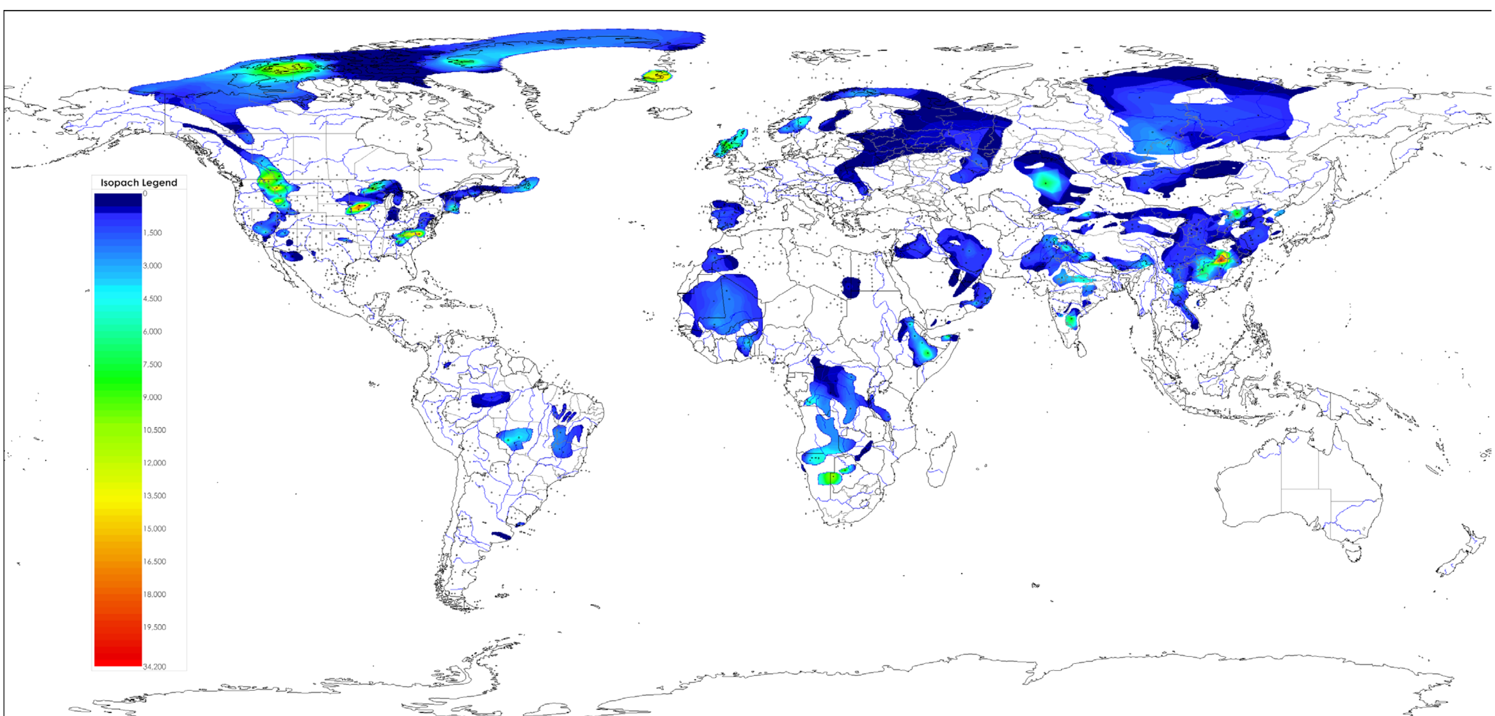

Figure 21. Pre-Sauk (Precambrian sediment and volcanic rocks) isopach (thickness) map for North and South America, Europe, Africa and Asia. Measurements in meters.

bursting of the fountains of the great deep as proposed by Dickens and Snelling (2015). If this were correct, there should be prolific deposits of partially dissolved vertebrates globally. Acidic waters would have also destroyed the invertebrates. Instead, we observe prolific volumes of mostly marine invertebrates in the earliest three megasequences and some marine vertebrates, especially fossils like fish (Fig. 22). There are few partially dissolved fossils of any kind in these early megasequences as would be expected if the fountains of the great deep did in fact cause significant dissolution.

Clarey and Werner (2017) demonstrated quite conclusively that the early flooding was minimal across many continents, showing only limited areal extent during the Sauk, Tippecanoe and Kaskaskia Megasequences (Clarey and Werner 2017; Clarey 2020). Figures 7, 14, and 15 show that the Sauk is one of the least extensive and lowest in volume of all megasequences.

3. Days 20?-30?

As the tsunami waves that generated the Sauk megasequence subsided, a new pulse of waves was generated from continued rapid plate motion, initiating the Tippecanoe megasequence. This megasequence also entombed tremendous numbers of marine organisms, reaching a slightly higher level across some continents and less in others (Fig. 8). Like the Sauk, the Tippecanoe seems to have been mostly confined to the pre-Flood shallow seas on the edges of the continents (Clarey and Werner 2018b).

It was about this time that the narrow ocean in the Atlantic region began to close, bringing Africa closer to North America. The geologic record indicates the initial collision occurred along the northern boundary between those two continents.

Figures 8, 14, and 15 show that the Tippecanoe is the least extensive and least in volume of all megasequences.

4. Days 30?-40?

Possibly during Days 30-40 the tsunami-like waves of another series of megasequence advanced across the continents depositing the Devonian and Mississippian rocks of the Kaskaskia Megasequence (Clarey 2020, pp. 234-255). These deposits again covered primarily shallow seas, leaving a massive blanket-like limestone across a large portion of North America that included the Redwall Limestone in Grand Canyon. Figure 9 and Table 1 show that the Kaskaskia is one of the three least extensive and least in volume of all megasequences.

The pre-Flood narrow sea (300 km width) between North America and Africa and Europe was completely closed at this point in the Flood (the end of the Kaskaskia). This caused deformation of earlier Flood sediments (Sauk and Tippecanoe) and created the Appalachian and Caledonian Mountains. Similarly, other early Flood mountains formed elsewhere, such as the Urals.

The Sauk, Tippecanoe and Kaskaskia Megasequences contain nearly 100% marine fossils (Fig. 22). Very few land animals, or plants for that matter, were trapped by these three megasequence cycles. Apparently, the intense rain was the major factor affecting the "dry" land portions of the continents up to this point in the Flood. Humans on the Ark, like Noah, who lived through the Flood would have known the first 40 days as a time of intense rainfall, without significant flooding of the dry land. The Bible suggests in Genesis

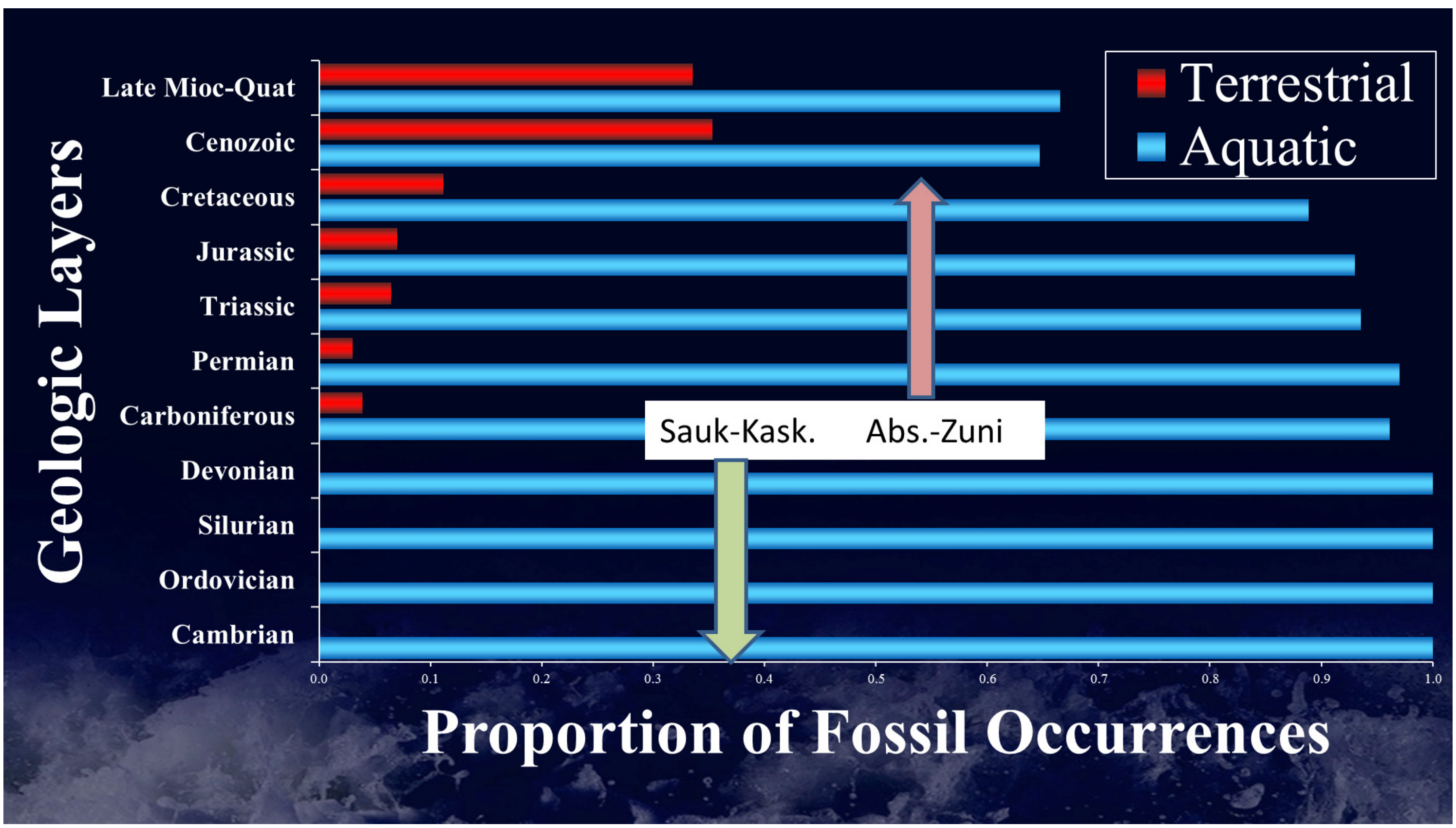

Figure 22. Graph of fossil occurrences of the major animal phyla by land or water environment and geologic age. Data from the Paleobiology Database. Courtesy of Dr. Nathaniel Jeanson.

7:17 that it wasn't until after these first 40 days that the Ark began to float, thereby verifying that the flooding of the land had commenced (Barrick and Sigler 2003; Clarey 2020, p. 246).

Figure 23 is an isopach (thickness) and extent map of the combined Sauk, Tippecanoe and Kaskaskia. This totals the rocks deposited in the first three megasequences. It may represent the first 40 days of the Flood.

5. Days 40-100?

The deposition of the Absaroka Megasequence marks a critical juncture in the Flood account when things went from bad to worse. The Bible tells us that after 40 days the ark began to float so we know the land began to be flooded at about this point (Fig. 10). It is no coincidence that the Absaroka is the oldest seafloor in most ocean basins today (Fig. 4). This is when subduction seems to have changed from limited subduction in selected areas to a global event, especially around the Pacific Rim (Clarey 2020). The pre-Flood ocean floor began to be rapidly consumed on a massive scale, resulting in much new seafloor at the ridges and a new ocean surface (Austin et al., 1994). This hotter ocean floor rose and pushed the ocean water and the tsunami waves higher and higher (Clarey 2020, pp. 256-281).

We interpret Days 40 to about 90 of the Flood as corresponding to the Absaroka megasequence. For one reason, the total surface area covered by the Absaroka was significantly greater than any of the earlier megasequences (Table 1). And the total volume (five continents) of Absaroka sediments is more than double any earlier megasequence volume. Figures 10, 14, and 15 and Table 1 show that the Absaroka is much more extensive and voluminous (18.5% of the global total, Fig. 14) compared to all earlier megasequences.

Secondly, the Absaroka megasequence introduces a lot of "firsts" to the geologic record that indicate the land was being actively flooded (Clarey 2020, pp. 271-275). It does not appear to be mere coincidence that so much occurs at the same time at this point in the Flood. These events had a common cause. Sea level was pushed upward dramatically in the Absaroka as vast amounts of new ocean lithosphere formed, resulting in the waves rising higher and inundating the formerly dry land across the globe. This began to change everything in the rock record. Prior to the Absaroka (Upper Carboniferous-Lower Jurassic), almost all fossils are marine in origin (Fig. 22). After the onset of the Absaroka, we find increasingly more and more land animals (and plants as coal beds) mixed with marine organisms.

The first extensive coal beds are found at this level, formed by the destruction of lycopod forests fringing the land masses (Clarey 2015a). These were the so-called Carboniferous coals. The Absaroka also saw the first and sudden appearance of massive numbers of terrestrial animal fossils. Amphibians show up near the base of the Absaroka, followed by reptiles in the layers above. Even dinosaurs and mammals make their appearances before the Absaroka is over (Triassic System). Most of these terrestrial fossils were mixed with marine fossils and many are found in marine rocks (Clarey 2015b).

Large marine reptiles also make their first appearance in the Triassic System of the Absaroka Megasequence. Ichthyosaurs were common fossils in the Lower Triassic and are found in rocks as high as the later Cretaceous System of the Zuni megasequence.

Finally, the so-called Permian extinction occurs in the early portion of the Absaroka. This has been hailed by secular scientists as the largest 'extinction' of all geologic time, or at least exhibiting the most abrupt changes in fossil species. Many of the fossils found above and below this horizon are, in fact, vastly different. However, most creation geologists explain 'extinction events' as the last occurrence of organisms in the Flood record. Specifically, we explain them as a result of rapid changes in water level that buried completely new

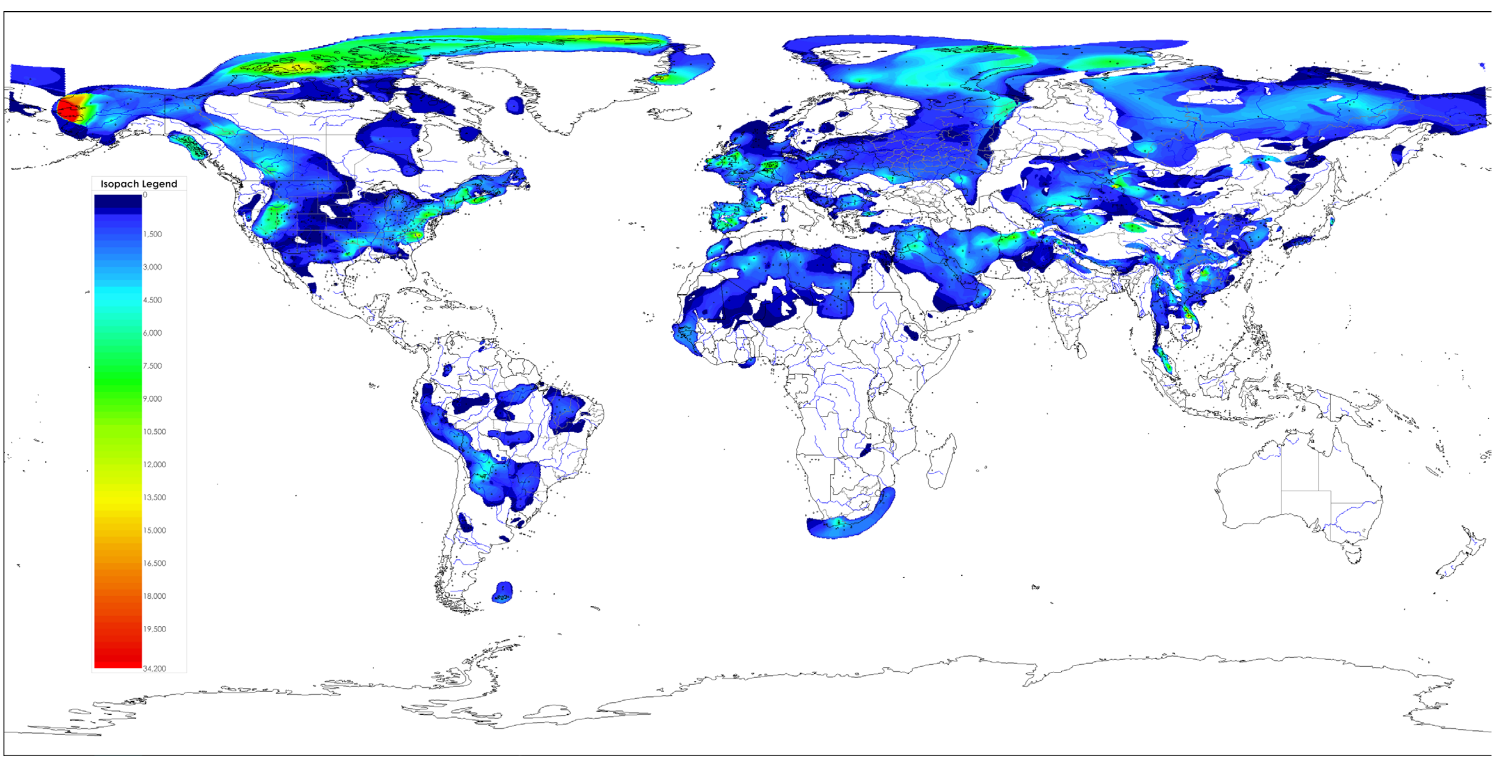

Figure 23. Isopach map of the combined Sauk, Tippecanoe and Kaskaskia. This approximates the extent of Flooding for the first 40 days of the Flood. Measurements in meters.

types of organisms from new biozones. In this view, the so-called ‘extinctions’ are merely a record of abrupt disappearances of many organisms at the same location in the fossil record. This was likely caused by the simultaneous inundation of a complete ecological environment at the same approximate elevation globally. Therefore, the Permian-Triassic level may correlate with the one of the highest water levels of the Absaroka (Clarey 2020, p. 273) (Figure 13).

By the early part of the Absaroka megasequence cycle, the major continents of the world had completely formed the traditional supercontinent Pangaea. This resulted in renewed deformation along the Appalachian Mountains (including many overthrusts) and the intense folding within the Hercynian mobile belt across Western Europe. These deformational events folded and faulted many of the earliest deposits of the Flood. Before this, the continents were in a slightly different pre-Flood supercontinent configuration, referred to as ‘modified’ Pangaea (Clarey 2020, pp. 152-171).

Later in the Absaroka megasequence cycle, subduction along the North American West Coast commenced and the various plates of the Pacific Ocean began their rapid development. The supercontinent of Pangaea was wrenched apart, beginning with rifting that separated North America from West Africa, initiating the formation of new seafloor in the North Atlantic Ocean.

6. Days 90?-150

Genesis 7:18-19 continues to report the progress of the Flood. The Ark was now free-floating and the geology also reflects this higher water level. The deposition of the vast Zuni megasequence may have been deposited during Days 90-150 of the Flood year (Clarey 2020, pp. 282-311). Figures 11 and Table 1 confirm that the Zuni has the most extensive surface coverage (62%, Fig. 15) and is the most voluminous (32.6%, Fig. 14) compared to all other megasequences.

During the deposition of the Absaroka and the subsequent Zuni megasequence, the entire ocean floor continued to be created anew (Clarey 2020, pp. 268-270). Runaway subduction was now happening all over the globe on a massive scale, making much new ocean lithosphere (Fig. 4). As Pangaea began to further break apart, the Pacific Ocean plates continued to subduct along the edges and continued to create the an entirely new global seafloor at the ocean ridges. It is likely the creation of this entirely new seafloor during CPT that ultimately drove the water high enough to Flood the entire globe by Day 150.

The Bible tells us the highest hills were covered by Day 150. The deposits from these tsunami waves became the Zuni megasequence. Fossils from this megasequence include most of the dinosaur graveyards across the American West and other locations globally, like Mongolia, Egypt and Morocco. The majority of these layers also contain prolific numbers of marine organisms. Fossils indicating a mixing of land and marine environments is ubiquitous for both the Absaroka and Zuni megasequences globally (Clarey 2015b). The Zuni shows massive herds of up to 10,000 or more individual dinosaurs deposited in mass graveyards in Montana as tsunami waves surpassed the stampeding herds of dinosaurs (Clarey 2015c).

The highest hills were stripped down to the pre-Flood crust by the fast-moving waves that went over the top. Many of these areas became the so-called shield areas of the world. According to the Bible, all air-breathing land animals and all humans not on the ark were drowned by this point.

Most conventional geologists do not accept that the entire world was completely flooded (2nd Peter 3:1-7), at least not during the Phanerozoic Eon (Paleozoic, Mesozoic, and Cenozoic). But the sedimentary rocks tell us a different story. Geologic and paleontological data reveal Earth’s geologic history includes an ever-increasing global Flood event that flooded all land. The Bible tells us that the highest water level rose only 15 cubits over (above) the highest mountains. Fifteen cubits is about 6.9-9.1 m (22.5-30 feet), depending on the length of a cubit. With only 7.6 m (25 feet) of water column we shouldn’t expect to find a lot of sediment covering the pre-Flood uplands. And we think post-Flood erosion removed a lot of these thinner deposits, and left vast areas with little or no Zuni. However, in North America, remnants of Zuni sediments are found near Hudson Bay, Canada and Michigan and Illinois, marking the high water point of the Flood like a “bathtub ring.” We see similar remnants on every continent (Fig. 11).

We suspect the Zuni was deposited from about Day 90 of the Flood to Day 150 of the Flood. The exact timing of when the Absaroka ended and the Zuni began is rather subjective. The Bible gives us no clues of any changes between Day 40 and Day 150 other than the water was prevailing higher and higher (Genesis 7). As noted above, the sedimentary record indicates that the end of the Zuni megasequence (end Cretaceous/earliest Paleogene) was the highest point of the Flood, which we believe was at or near Day 150 (Clarey, 2020, p. 308) (Table 1). Some earlier researchers have disagreed, instead claiming the Flood reached a peak on Day 40 (Whitcomb and Morris 1961) or reached a peak soon after Day 40 and stayed high or slightly higher until Day 150 (Barrick and Sigler 2003; Barrick 2008). Like us, Austin et al. (1994), Coffin (1983), Snelling (2009), and Walker (2011) all interpret the highest water point as Day 150 of the Flood. From the rock record (Table 1), it is quite evident that the Zuni likely records the highest sea level of all the megasequences and was most likely reached on Day 150 (Snelling 2009; Clarey 2020). The Zuni was the culmination of a fairly continuous rise in global sea level that began in the Sauk, illustrative of a progressive Flood.

Globally, Pangaea continued to separate during the Zuni, splitting Africa from South America. The ark also struck ground in Day 150 as the Mountains of Ararat rose. It seems possible that the ark grounded on a hill that formed near the end of the Zuni megasequence, west of Mt Ararat. (Clarey 2019c).

Figure 24 shows an isopach map of the combined Absaroka and Zuni. This map delineates the approximate extent of the Flood during days 40-150.

7. Days 150-314

The Tejas megasequence includes most of the Tertiary System, now split into the Paleogene and Neogene Systems (Fig. 13). The Tejas megasequence most likely represents the time when the floodwaters were receding (see Flood boundary discussion below), specifically Days 150-314 of the Flood. It seems quite clear in the biblical text that the recession of the water began on Day 150, after reaching a maximum level that same day. Genesis 8:13 suggests that the floodwaters had completely dried up across the entire earth by the first day of the first month of Noah’s 601st year (Tomkins 2023). Depending on the length of the calendar year used by the ancients, this equates to about 314 days after the Flood began. (Day 1 was the 17th day of the second month of the previous year.)

Genesis 8 tells us that God brought a wind to lower the Flood level and push water off of the flooded continents. During this interval, major sections of the newly created seafloor began to cool and sink, drawing the water off the continents and back into the ocean basins. In fact, large portions (a third or more) of the seafloor were still being made during the Tejas, demonstrating that catastrophic plate tectonics was still functioning, including the generation of massive earthquakes and tsunamis (Fig. 4). Advocates for a K-Pg Flood boundary must explain how the Flood mechanism was still as vigorous, yet maintain that all of the floodwaters had receded before the Tejas was deposited.

The recession of the water is likely tied to the cooling of the newly created ocean seafloor/lithosphere. As ocean lithosphere cools it becomes more dense, contracts, and sinks a bit deeper, pulling the water depth in the ocean down with it (Clarey 2020). This was likely the primary process that drove the waters off the continents and back into the ocean basins. As noted above, ocean seafloor was still being created at an astounding rate from the Absaroka megasequence right through much of the Tejas. However, the older ocean lithosphere that was created in the Absaroka and early Zuni was apparently cooling fast enough to subside significantly, lowering the seafloor in those areas. The result of this seafloor subsidence surpassed the rate of production of new buoyant seafloor, causing a net lowering of sea level. This process continued throughout the Tejas megasequence and contributed greatly to the withdrawal of the floodwaters off the continents. Support for this interpretation is found in the volume of sediment by megasequence graph (Fig. 14) and Table 1. Note, the Tejas has the second most volume of sediment compared to all other megasequences, at 32.5% of the world total (for five continents). The likelihood that the Tejas as a receding deposit is expanded upon below in the Flood boundaries section.

It is important to note that volcanic activity associated with subduction was also peaking during the Tejas (Clarey, 2020). Supervolcanoes, like Yellowstone, spewed out thousands of meters of ash and volcanic debris. Most of the world's mountain ranges rose simultaneously as the subduction process had thickened the crust and caused renewed uplift (Clarey, 2020).

Much of the Tejas megasequence likely represents material washed off the highest pre-Flood hills that became spread onto the Zuni strata as the floodwaters began to recede (Day 150+). Fossils in the Tejas megasequence also contain increasingly more angiosperms (flowering plants) and mammal fossils compared to the Zuni deposits, possibly indicative of higher terrains. These areas were apparently wiped free of all life, removing even the pre-Flood soil and any rock layers that might have existed there.

Dr. Russ Humphreys, in his translation of Genesis 6:7 and Genesis 7:23, suggests the term "wiped off" to explain this stripping of the land surface right down to the crust:

> And the Lord said, "I will wipe off man whom I have created from the face of the land, from man to animals to creeping thing and to birds of the sky; for I am sorry that I have made them." Thus He wiped off every living thing that was upon the face of the land, from man to animals to creeping things and to birds of the sky, and they were wiped off from the earth (Humphreys 2014, p. 57)

God wiped off these areas of highest elevation where most of the large mammals, flowering plants, and humans likely existed in the pre-Flood world, spreading their remains in sedimentary layers on top of the earlier buried dinosaurs, creating Tejas strata. Animals may have been buried closer to their place of origin as the floodwaters were rising (Sauk through Zuni Megasequences) until Day 150 was reached. The water and sediment likely engulfed the animals nearly in situ as the water level increased. But the Tejas depositional pattern appears to have been different (Fig. 12). It was apparently the result of a reversal in flow direction as God began to remove the waters off the continents after Day 150. This not only transported the flora and

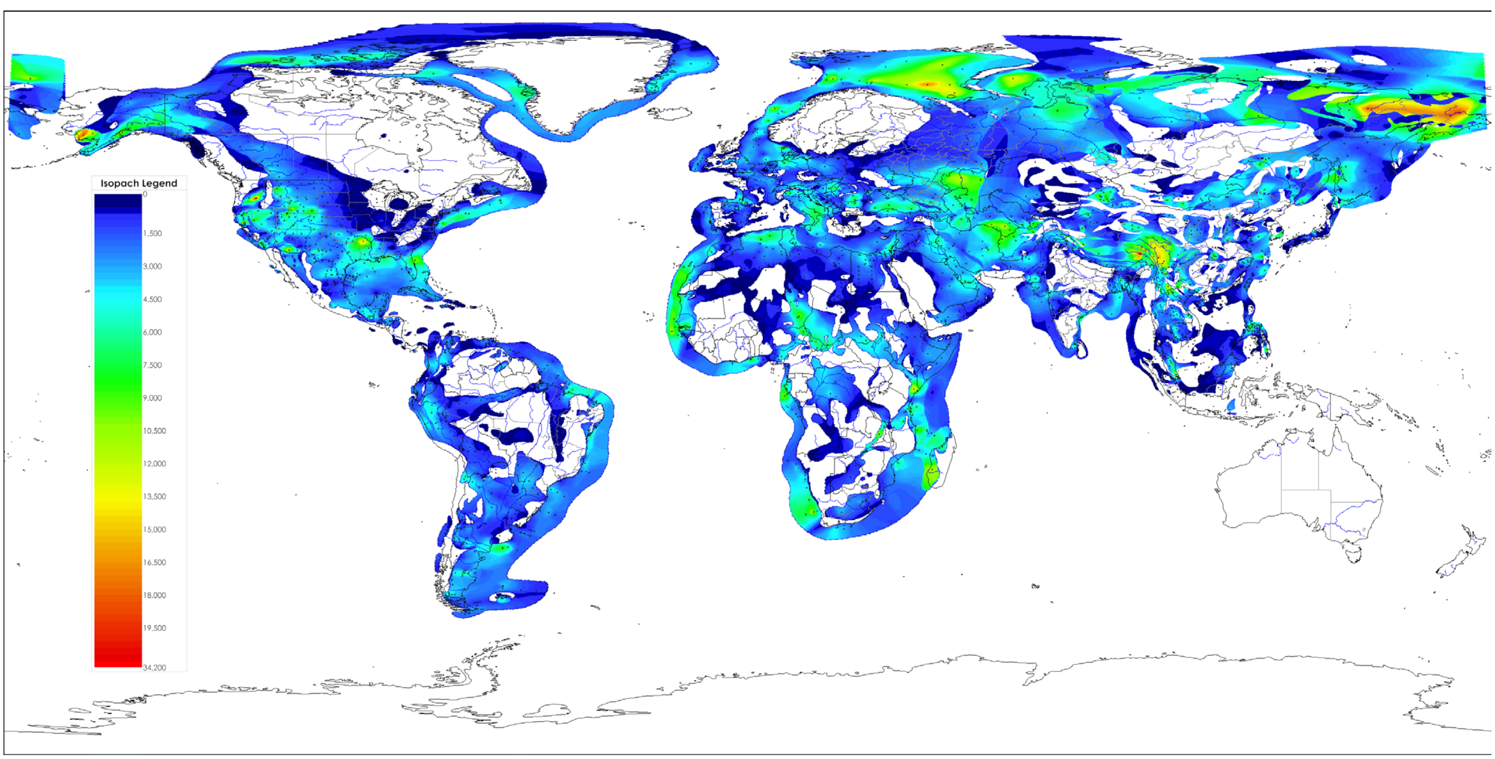

Figure 24. Isopach map of the combined Absaroka and Zuni. This approximates the extent of Flooding from days 40-150 of the Flood. Measurements in meters.

fauna from off of the highest hills, it spread those deposits outward toward the continental margins. Animals and plants that lived in areas that are now exposed crystalline rock (Precambrian shields) were transported great distances and deposited on top of the Zuni strata and sometimes older exposed strata too.

During the receding phase, the massive deep-water Whopper Sand was deposited in the Gulf of Mexico as the water began to drain off the North American continent (Fig. 25) (Clarey 2015d). Continental shelf regions all over the globe trapped thousands of feet of sediment that drained off the land. The thickest and most extensive coal seams in the world were created at this time in the Flood (Clarey, Werner, and Tomkins 2021). Thick and extensive deposits of coal are also found in Paleogene and Neogene sediments offshore Asia also (Fig. 26) (Clarey 2021a). These were apparently washed offshore during the Flood's receding phase.

As the water drained and the mountains uplifted, vast canyons were rapidly carved including Grand Canyon and Palo Duro Canyon, the two largest canyons in the USA (Clarey 2021b), and Denman Canyon in Antarctica and the Greenlandic megacanyon (Clarey 2021b). Other areas exhibit broad planation surfaces formed by erosion as the water drained seaward. As most humans were likely drowned late (close to Day 150), few were likely buried deep enough to become fossils. Instead, they most likely rotted at or near the surface, or were eroded away during the 4500 years since the Flood event.

By Day 314 or so (Gen 8:13), Noah looked out of the ark and saw that the whole Earth was dry. Because there was insufficient vegetation growth right after the Flood, Noah and the animals were held by God on the ark for two more months before exiting (Johnson and Clarey 2021). By Day 371, Noah and the animals began to exit the ark (Gen. 8:18-19).

D. Summary and Implications

The megasequences show a clear progression of the sedimentary rocks across the globe (Figs 7-15), supporting the interpretation of a progressive Flood. The first five megasequences show a visible and

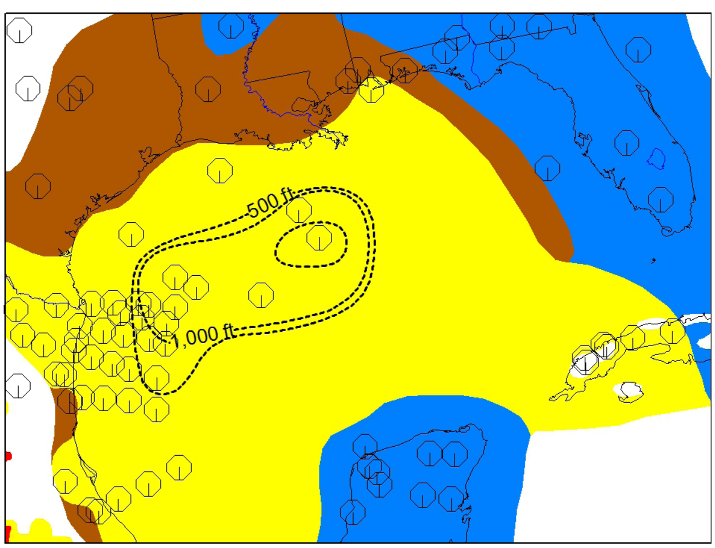

Figure 25. Mapped extent of the Whopper Sand in the Gulf of Mexico. Contours in feet (Clarey 2015d). The circles represent stratigraphic columns used in the study. Yellow represents sand. Blue represents marine carbonate rock. Brown represents clay (most offshore clastics are unlithified). This is a section from the Tejas megasequence basal lithology map for North America, not shown in its entirety.

discernable pattern of increasing extent, reaching a peak extent in the Zuni. This matches the Biblical account as written in Genesis 7, and the predictions of CPT, where the production of new seafloor was the primary driver of increasing flood levels.

Initial plate motion and the creation of small amounts of new seafloor spread the earliest megasequences across limited portions of the continental crust. These earliest three megasequences stack one on top of the another in most locations. Continued creation of new seafloor pushed the water progressively upward, peaking in the Zuni megasequence (Figs. 7-12, 14, 15, Table 1). Subsequent cooling of the new seafloor caused ocean basins to sink, drawing water off the continents. This caused a shift in sedimentation to the offshore as the Flood receded during the 6th megasequence (Tejas). The interpretation that the Tejas is the receding phase is supported by the extent of the Tejas that is still observable across the continents and the sheer volume that was deposited (Figs. 12, 14, 15 and Table 1).

The progressive Flood model also provides a framework for the fossil record. The fossils reflect a steadily changing record of different ecological zones. The earliest three megasequences (Sauk, Tippecanoe and Kaskaskia) seem to have inundated only shallow marine environments as the fossils within these megasequences are almost exclusively marine (Fig. 22). We interpret that these megasequences were deposited in the first 40 Days of the Flood (Fig. 23). As the water rose higher, floating the Ark (on or after Day 40) and flooding portions of the dry land, the first massive coal seams appear and the first land animal fossils appear in great numbers. These coals are the lycopod coals from the coastal regions (Clarey 2015a). This process continued flooding higher and higher elevations and new ecological zones, depositing the Absaroka and Zuni megasequences between Days 40-150 of the Flood, until the water covered the highest hills (Fig. 24). The fossils of the Absaroka and Zuni mostly reflect lowland and wetland ecological zones. All are universally mixed with marine fossils (Clarey 2015b; 2020).

Finally, the plants and animals living on the pre-Flood highest hills (many large mammals) were swept off and distributed on top of the dinosaur-bearing rocks. These became the fossils found in the Tejas megasequence deposits and the massive Tejas coal deposits composed of metasequoias and many types of flowering plants.

1. Progressive Flood Model Helps Define Flood Boundaries

a. Lower Flood Boundary

One of the most important aspects of any Flood model is definition of the boundaries. Most creation scientists assume the beginning of the Flood record is marked by the rocks of the Sauk megasequence, and which at times coincides with the Cambrian Explosion (Clarey 2020). In other locations, later megasequences like the Absaroka and Zuni were deposited directly on crystalline basement as the water rose higher and flooded more of the continents (Thomas and Clarey 2021). These locations demonstrate that the onset of flooding at these sites was not reached until later in the Flood. This is a pattern best explained by the progressive Flood model.

However, in some locations, particularly near areas that experienced Late Proterozoic volcanic activity, Flood deposition likely began prior to the Sauk megasequence. These P3657mre-Sauk rocks may represent sediments and volcanic rocks deposited and extruded during the earliest days or weeks of the Flood, part of the aforementioned "fountains of the great deep" activity.

Previously, Sigler and Wingerden (1998) and Wingerden (2003) defined and applied pre-Flood/Flood boundary criteria in Western

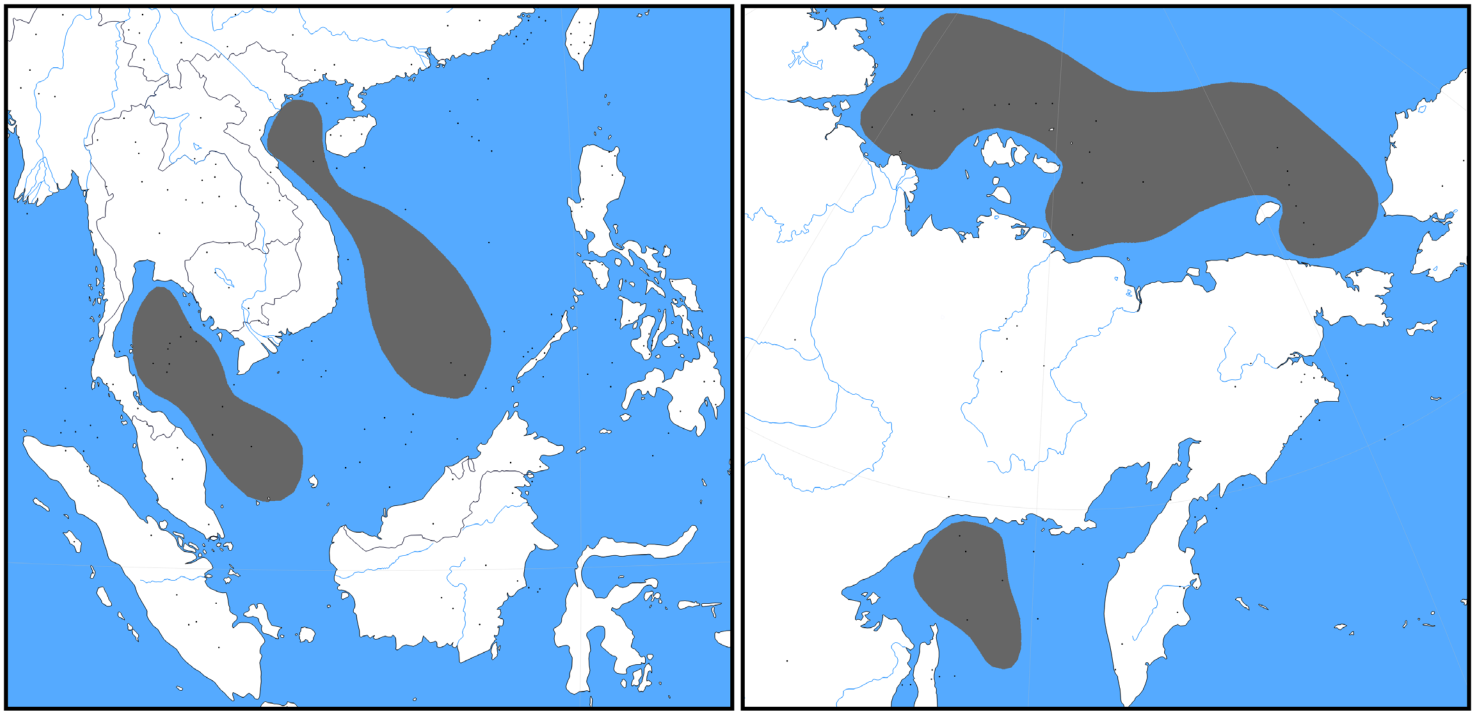

Figure 26. Maps of southeast (left) and northern (right) Asia showing in gray the extent of offshore Tejas coal beds (Clarey 2021a).

North America, recognizing about 3657 m (12,000 feet) of Pre-Sauk strata extending from Sonora, Mexico, through the Cordillera, to the North Slope of Alaska (Wingerden 2003, his Figure 1). They concluded these rocks were part of the earliest Flood activity. However, in many other locations that contain Pre-Sauk sediments and volcanic rocks, it is not so easy to identify an exact level where the Flood began without doing considerably more research. For simplicity, we chose to start with the Sauk megasequence as our initial Flood boundary, recognizing that it is not always the case. Further research into the pre-Flood boundary across the globe is needed, but it is beyond the scope of this paper.

Part of the problem is that some Pre-Sauk sediments may have been either created on Day 3 of Creation Week as direct fiat creation, or were sediments that formed during the 1,700 years between Creation and the Flood. It is also possible these layers were deposited in the earliest days or weeks of the Flood, during rifting, as mentioned above. Austin et al. (1994) concluded that substantial quantities of clastic and carbonate sediment must have existed in the pre-Flood ocean and were redistributed in the Flood. Just how much pre-Flood sediment actually existed is unknown. This is a topic for future study.

Also, many pre-Flood (Pre-Sauk) sedimentary rocks were subsequently heated, deformed, and metamorphosed in the Flood year, sometimes distorting the original layering and likely also altering their radioisotope ages (Clarey 2020). This makes picking the exact pre-Flood/Flood boundary even more problematic in some locations.

In other instances, the sedimentary structures and grain size of the sediments may help discern the pre-Flood/Flood boundary, as in the Sixtymile Formation of eastern Grand Canyon. Austin and Wise (1994) formulated their interpretation that the Sixtymile Formation is the bottom unit of the Sauk Megasequence in Grand Canyon using observable sedimentological evidence within the strata, noting that the formation contains large angular clasts indicative of high-energy deposition at the start of the Flood. The formation is composed primarily of sandstones and breccias and occasional mudstones and has a maximum thickness of 60 m.

In 2018, the conventional geologic community arrived at a similar conclusion, finding that the Sixtymile Formation was much younger than originally thought (Karlstrom et al. 2018). Prior to this study, the secular community insisted that the formation was 650 million years old. Karlstrom et al. (2018) concluded that the Sauk Megasequence includes the Sixtymile Formation based on their age-dating of detrital zircons. However, they believe this unit marks the beginning of the first of several flooding events, not the beginning of the great Flood.

Nonetheless, the pre-Flood/Flood boundary is fairly well defined in most locations and is commonly found at the base of the Sauk megasequence.

b. Upper Flood Boundary

For decades, creation scientists have debated the level at which the Flood ended in the rock record. However, most agree that the Flood/post-Flood boundary is at one of two levels: 1) at the top of the Cretaceous system, known as the K-Pg (K-T) horizon (Austin et al. 1994; Whitmore and Garner 2008; Whitmore and Wise 2008) or 2) at or near the top of the Neogene (Upper Cenozoic) at about the Pliocene level (Clarey, 2017; Oard 2013) Clarey (2020, p. 339) has called this the N-Q boundary for Neogene-Quaternary.

Our examination of the global rock data from five continents is helping to resolve this matter. Below, we present numerous geologic observations that demonstrate the Flood/post-Flood boundary is much higher than the K-Pg level and likely near the N-Q. Some of these features are so large and/or unusual in scale that local post-Flood catastrophes could not have conceivably produced them. Others demonstrate geologic conditions that could only have existed while the floodwaters were still covering large portions of the continents (Clarey 2015d; 2021a; 2021b; Clarey et al. 2021). Collectively, they strongly dispute the claim that the Flood ended at the stratigraphic level of the K-Pg boundary (Clarey 2017; Clarey and Werner 2019a).

First, the Whopper Sand (Fig. 25) (Clarey 2015d). Oil companies discovered the Whopper Sand in the Gulf of Mexico by drilling wells in water depths of 2100-3000 m and over 350 km offshore (Sweet and Blum 2011). The only reasonable explanation for this 300-580 m-thick sand bed, that covers much of the floor of the deep Gulf of Mexico, is a high-energy runoff of water—something that easily fits the progressive Flood model. This would coincide with the change in water direction described for Day 150+ of the Flood year. Initial high energy drainage rates, coinciding with a sudden drop in sea level at the onset of the Tejas Megasequence, best explains this deposit. The forces responsible provided a mechanism to transport the thick Whopper Sand into deep water.

Second, the tremendous volume of Tejas sediment argues for a global event (Figs. 12, 14, 15) (Holt 1996). The Tejas accounts for the second most volume of any megasequence at 32.5% of the total (Phanerozoic) Flood sedimentation (Fig 14). Furthermore, the Tejas is the second most extensive deposit (second only to the Zuni Megasequence) (Fig. 15, Table 1). The tremendous thicknesses of Paleogene and Neogene sediments (Tejas) cannot be easily dismissed as the product of local catastrophes. The sediments and the fossils they contain are better explained by the receding water phase of the Flood as mountain ranges and plateaus were actively being uplifted later in the Flood year.

Third, the thickest and most extensive coal seams are found globally in Tejas sediments. The Powder River Basin (PRB), USA coals, which are all within Paleogene system rock layers, contain the largest reserves of low-sulfur subbituminous coal in the world (Clarey et al. 2021). At least six or more coal beds in the PRB exceed 30 m in thickness, and some individual beds have been shown to extend for over 100 km in all directions. Some of these coal beds can exceed 60 m thick in places, such as the Big George coal layer. There are similarly 60 m thick coal seams in the Cenozoic in Germany also (Falk et al. 2022). These coal beds were derived from huge mats of plant and tree debris, primarily composed of angiosperms that likely lived at higher pre-Flood elevations. Other extensive Tejas coal beds are found offshore Asia that are best explained by the receding phase of the Flood (Fig. 26) (Clarey 2021a). Deep-water coals in the North Luconia region of the South China Sea, about 280 km off of Borneo, were found in a 1.5 km-thick section of Oligocene (Upper Paleogene) strata, over 3 km below sea level and in 1000 meters of water (Lunt 2019). Where did these coals originate? It is likely vast forests on the pre-Flood uplands were ripped from the land as the floodwaters crested on Day 150. These huge mats of vegetation would have been transported off the continents like the Whopper Sand and buried in the ocean as the Flood receded (Clarey 2015d). Today, the buried vegetation is found in the form of subsurface coal beds off the southeast Asian coast, the South China Sea, the Okhotsk Sea, and spread across the East Siberian Shelf, Laptev Shelf, and Russian Chukchi Shelf (Figure 26) (Gnibidenko and Khvedchuk 1982; Polachan et al. 1991; Drachev et al. 2009; Fujiwara 2012; Nguyen 2018; Hoang et al. 2020; Lunt 2020). It seems most likely that these Cenozoic (Tejas) coal beds were also produced by the Flood's runoff processes. Local catastrophes have great difficulty explaining the massive extent, distance from shore, and depth and thicknesses of these offshore coals.

Fourth, geophysical and seafloor data suggest that CPT continued right across the K-Pg boundary and up to the Pliocene, with no indication of a significant change in plate velocity. In other words, the mechanism (CPT) for the Flood was still in full swing during most of the Tejas megasequence. Runaway subduction and rapid seafloor spreading caused the creation of over one-third of the world's ocean crust during the deposition of the Tejas megasequence (Paleogene and Neogene Systems). Figure 4 shows the seafloor in red, orange and yellow made during the Cenozoic, in order of increasing age. This is a tremendous amount of seafloor made after the K-Pg boundary. In addition, the huge earthquakes generated by this movement would have been devastating for any type of human civilization after the Flood if the Flood ended at the K-Pg. In fact, India did not collide with Asia until the Neogene, making the Himalayas in the process. How could animals and humans survive these types of catastrophic tectonic events if they were off the Ark living just a few countries away?

In addition, our research efforts have identified other geological deposits that further support a high Cenozoic Flood/post-Flood boundary. Massive-scale, Tejas deposits, like the Ogallala Formation spread across the Great Plains, USA, are best explained by the receding phase of the Flood (Clarey 2018). The Paleogene and Neogene deposits that are up to 17 km thick in the South Caspian Basin are also best explained by the receding phase of the Flood (Clarey and Werner 2019b).

And probably the best evidence that the Tejas megasequence represents the receding phase comes from studies of the rock columns across Europe, Africa and the Middle East, including Turkey (Fig. 27) (Clarey and Werner 2019a). Maps and stratigraphic columns near Turkey show that the deposition of undisputed marine rocks like carbonates and salt was uninterrupted and continuous from the Cretaceous (Zuni) upward through the entire Tejas section (Paleogene and Neogene), including the surface rocks of the Miocene and Pliocene (Neogene) (Figs. 28-31) (Clarey and Werner 2019a) These marine sediments are not trivial or local, but extend across Syria, Iraq, Turkey, much of Europe, and much of North Africa (Figs. 30, 31). The Flood could not have been drained from these areas and still deposit these marine rocks. These are clearly water deposits. The area of continuous carbonate deposition includes the countries of Syria, Turkey, and Iraq, completely surrounding and including the most likely Ark landing site. Furthermore, how could the Tower of Babel be built if the area was still underwater?

This was the same logic used by Snelling (2010b) to place his Flood boundary in Israel above the K-Pg at the unconformity between the Eocene chalks and the Miocene, possibly in the Oligocene. He found continuous deposition of thick chalk beds and cherts across Israel from the Cretaceous upward through the Upper Eocene. The top surface being an unconformity where "arguably post-Flood isolated minor continental sediments were deposited in the Miocene" (Snelling 2010b, p. 304). And yet, these so-called Miocene 'continental' sediments contain layers of limestone, dolomite and salt, usually interpreted as marine (Snelling 2010b, p. 272). These 'marine' layers are found in both the Miocene and above in Pliocene sediments in northern Israel and the northern Negev, suggesting some marine influence continued throughout the Neogene. These findings match well with our findings that the upper Flood boundary is near the top of the Neogene (top Tejas).

Suggestions that the Flood was completely over at the K-Pg boundary also fail to explain the lack of significant erosional evidence at the K-Pg boundary. Where are the major canyons and the planation surfaces like those that formed at the top of the Tejas (Clarey 2021b)?

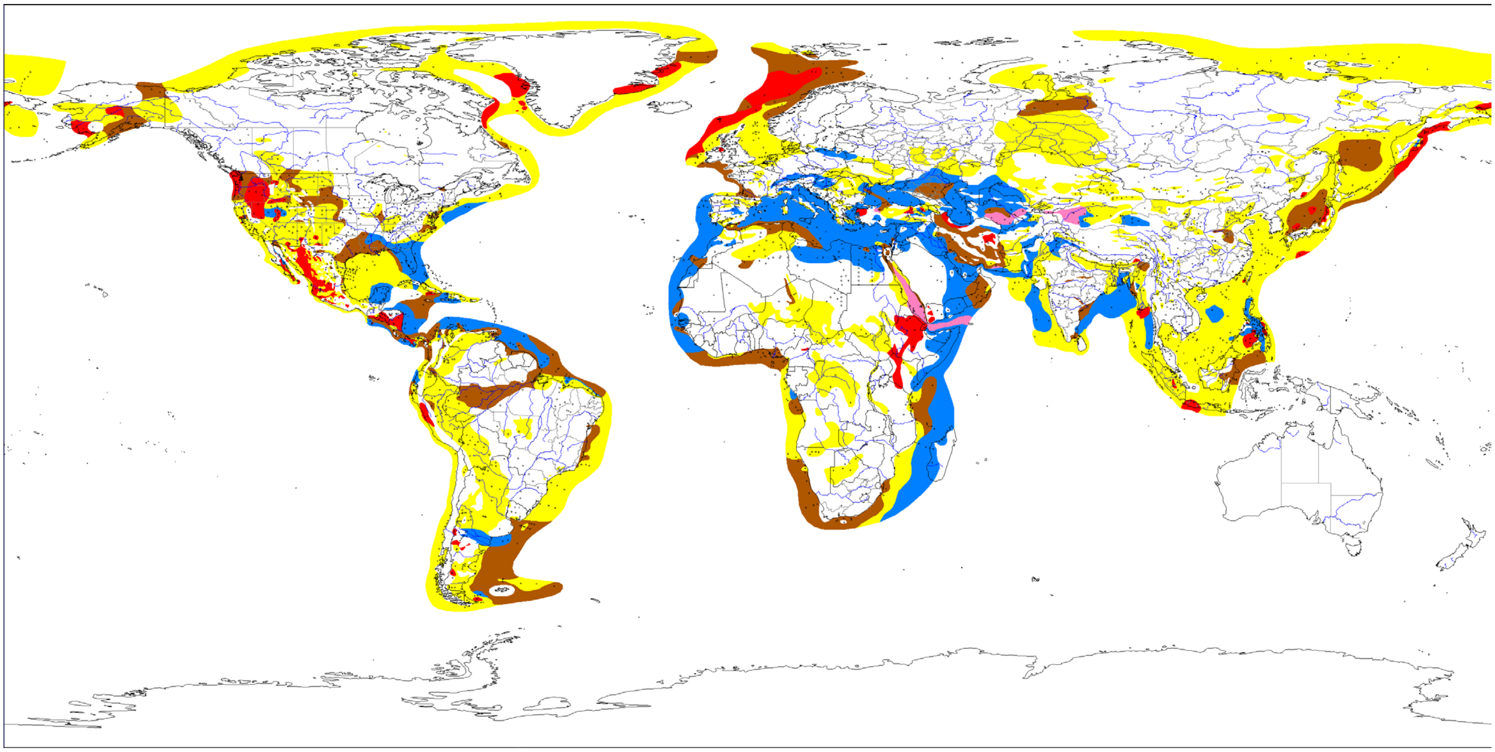

Figure 27. Global basal lithology map of the Tejas megasequence. Yellow represents sandstone. Blue represents marine carbonate rock. Brown represents shale. Red represents volcanic rocks. Pink represents marine salt deposits.

There should be massive erosional features at the K-Pg, but in most places, it resembles a disconformity, where the sedimentary beds are parallel above and below the boundary surface, with little indication of any missing sediment or massive erosion. A major event like the draining of the Flood waters should have left significant scarring of the K-Pg surface and left tremendous thicknesses of offshore deposits below and at the K-Pg level. But there is little evidence that either of these occurred until after the K-Pg level.

Furthermore, there is no indication that marine deposition was over at the K-Pg level and that all Tejas sedimentation was continental as is asserted (Figs. 27-31) (Austin et al, 1994). Studying the sedimentary rocks across the globe shows that nothing could be further from the truth (Clarey and Werner 2019a). Admittedly, there was massive uplift of many mountain ranges later in the Flood year, which caused the areas surrounding the uplifts to dry out first. And this would make "continental-looking" sediments deposited near these present-day mountains. But the global stratigraphy shows that most of the world was still underwater during the deposition of most of the Tejas megasequence (Figs. 27-31). And recall, the Tejas accounts for 32.5% of the total Flood sediments by volume, the second most of any megasequence, and is the second most extensive megasequence (Fig. 14). How could this much sediment be deposited across such vast areas be produced by isolated local catastrophes?

These data strongly suggest that the Flood was not over until near, or at, the end of the Tejas megasequence. Genesis 8:13 tells us that the "waters were dried up from the earth." This most likely means that all the continents were dry at this point (Tomkins 2023). This was approximately Day 314 of the Flood and most likely when the Tejas Megasequence concluded. Collectively, these data establish that much of the Paleogene and Neogene (known previously as the Tertiary) was the receding phase of the Flood, placing the Flood/post-Flood boundary at or near the top of the Tejas Megasequence (Upper Neogene). This has been referred to as the N-Q boundary since it marks the boundary between the Neogene and the Quaternary (Clarey 2020).

In addition, first appearances of fossils of many large mammals and many first appearances of fossil flowering plants appear in the Tejas, supporting a Flood interpretation for these fossils. These animals and plants were swept off the highest pre-Flood hills as the waters rose 15 cubits over the tops, and then were buried as the floodwaters began to recede. Rock data not only confirm there was a global Flood as described in the Bible, but they also help us better understand its final stages of sedimentary deposition.

In contrast, advocates for a K-Pg Flood/post-Flood boundary consider all Cenozoic (Tejas) fossils to have formed in the window of time between the ending of the Flood and the beginning of the Ice Age (Austin et al. 1994; Whitmore and Garner 2008; Whitmore and Wise 2008; Snelling 2009). This only allows about 100 to 200 years for the dispersal (whatever the mechanism) and incredible diversification and subsequent burial of all Cenozoic mammals, flowering plants, and other fossils on multiple continents and in nearly the exact same stratigraphic order simultaneously (Wise 2009). Therefore, the presumed local catastrophes used to explain these Cenozoic fossils seem to more closely resemble global catastrophes. Global catastrophes are better explained with a global Flood.

Indeed, a Flood model ending at the K-Pg requires rapid biological changes, referred to as "saltation," to explain the many mammals and plants not found in sediments prior to the Eocene (part of the Paleogene), including the whales (Wise 2009; 2017).

Furthermore, those that advocate a K/Pg Flood/post-Flood boundary have not sufficiently offered a viable mechanism for post-Flood

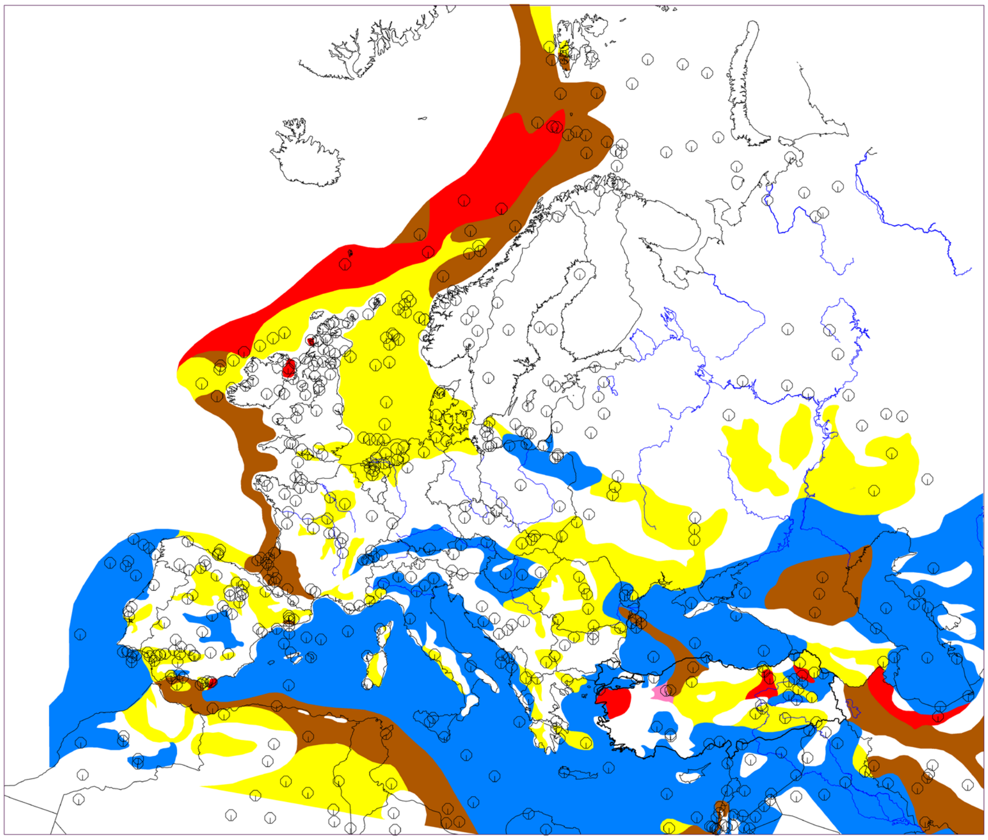

Figure 28. Basal lithology map of the Tejas megasequence around Turkey. Yellow represents sandstone. Blue represents marine carbonate rock. Brown represents shale. Red represents volcanic rocks. Pink represents marine salt deposits. This is a section from the Tejas megasequence basal lithology maps for Europe and Asia, not shown in their entirety (Clarey and Werner, 2019a).

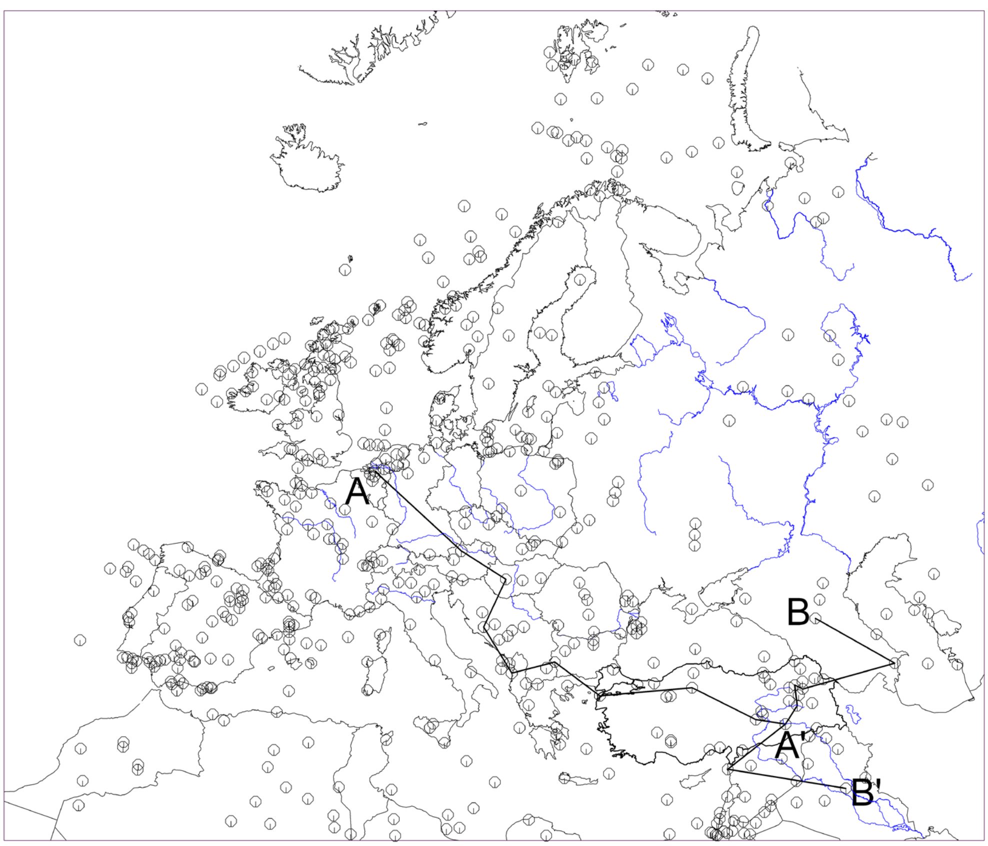

Figure 29. Base map of the area around Turkey showing locations of stratigraphic columns used for sections A-A' and B-B' (Clarey and Werner, 2019a).

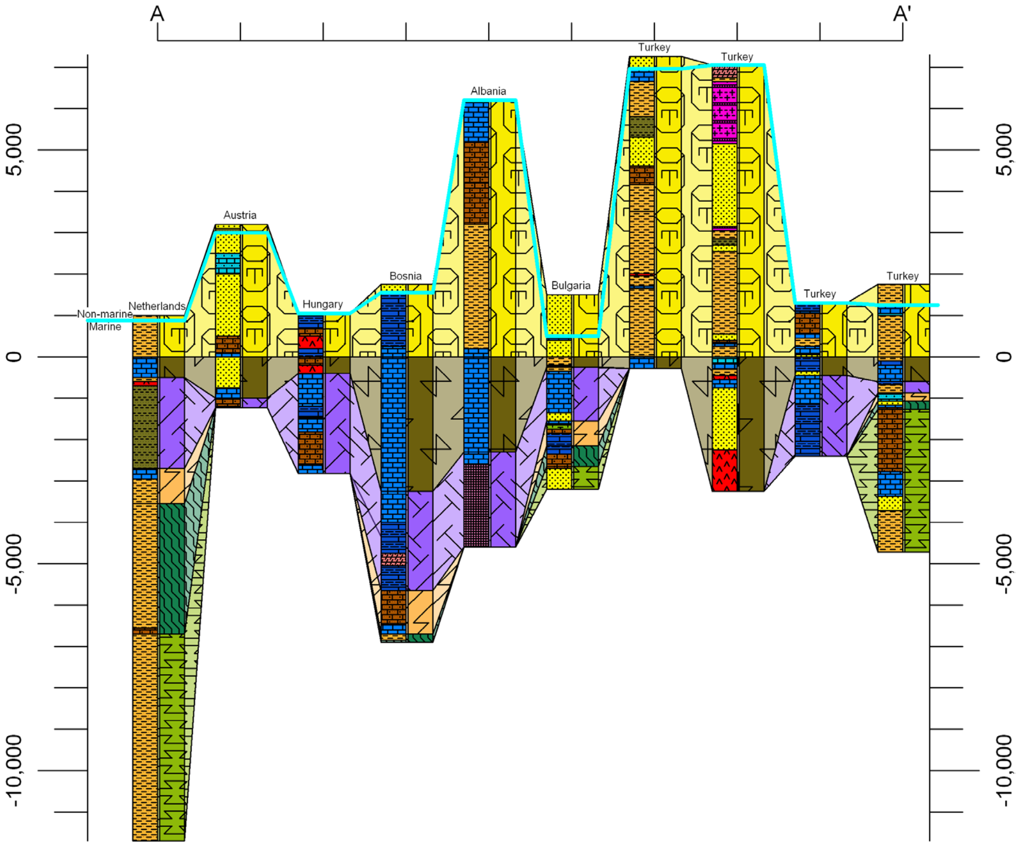

Figure 30. Stratigraphic section A-A' flattened on the K-Pg boundary. Tejas sediments are shown above in yellow. Light blue line in the Tejas section shows the boundary of marine v. non-marine above. Note, most of the Tejas is marine rocks. Location of section shown on Fig. 29. Thicknesses shown in meters (Clarey and Werner, 2019a).

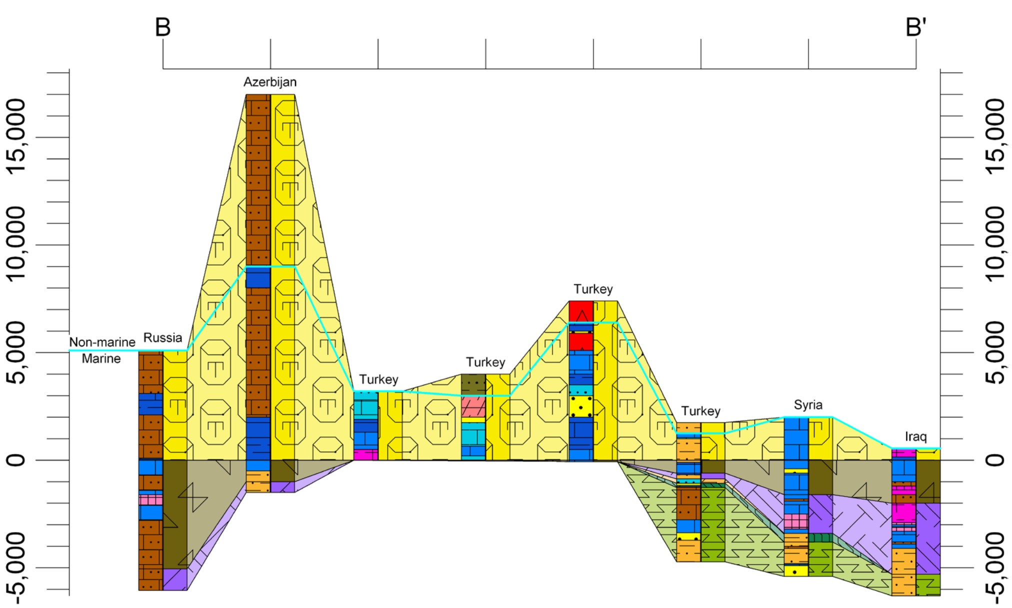

Figure 31. Stratigraphic section B-B' flattened on the K-Pg boundary. Tejas sediments are shown above in yellow. Light blue line in the Tejas section shows the boundary of marine v. non-marine above. Note, most of the Tejas is marine rocks. Location of section shown on Fig. 29. Thicknesses shown in meters (Clarey and Werner, 2019a).

animal migration, particularly for the largest mammals and the hoofed animals (Whitmore and Garner 2008; Whitmore and Wise 2008; Snelling 2009; Ross 2012; Snelling and Matthews 2013; Ross and Arment 2022). Recall, that at the end of the Flood and before the Ice Age, water levels were about 190 meters higher than today, which includes 70 m for the ice still remaining in Greenland and Antarctica. Suggestions that nearly all Cenozoic fossils were the result of post-Flood local catastrophes fails to explain how the post-Flood animals arrived at the newly separated continents. Large mammals and hoofed animals would have a hard time floating on log mats for weeks or months without proper footing, nor sufficient food and water supplies. In contrast, a high Cenozoic or N-Q Flood boundary better explains the timing of the land bridges and the migration from the Ark during the Ice Age, well after the Tejas deposition was fully over and the water had drained from the land.

Finally, it is the strength of the data in any debate that is most critical and revealing. Sedimentary data are not open to as much interpretation and manipulation as are fossil data alone. Fossils are only as good as what has been discovered and identified. Biases in collection, extent of erosion, and amount of exposure all factor into the fossil database. Each can filter and skew paleontological data. Whereas, stratigraphy (the rock layers in place) provides a much more extensive and indisputable complete record of history. The fossils are merely found within the stratigraphy. The rock record is as strong and robust as the principle of cross-cutting relations or the principle of superposition. Stratigraphic data cannot be altered easily by biases. It represents the true rocks in place, verified by outcrops and wells, spread across vast portions of the continents, and as real as the pages of a book.

As discussed above, one of the major conclusions included in the progressive Flood model is that the upper Flood boundary is much higher than some have previously thought (Austin et al. 1994). Rock data indicate that the Middle East, North Africa and much of Europe were still inundated by Flood water throughout the deposition of most of the Neogene (upper Tejas) sediments (Figs. 28-31) (Clarey and Werner 2019a). Stratigraphic columns across Europe, Turkey, Syria and Iraq show continuous carbonate, salt and/or marine sand deposition from the Cretaceous up through, and including, the Miocene and sometimes the Pliocene level (Figs. 30, 31). These rock data demonstrate that the post-Flood boundary is high in the Cenozoic. For these reasons, we are confident in our interpretation that the upper Flood boundary was near the N-Q boundary, and possibly right below the Ice Age deposits.

2. Progressive Flood Model and CPT Explains the Flooding of the Continents

One of the strengths of CPT is its ability to explain the progressive Flood that the stratigraphic data suggest. The Bible plainly states that during the initiation of the Flood (Genesis 7:11), the "fountains of the great deep were broken up, and the windows of heaven were opened." In terms of CPT, the breaking up of the fountains of the great deep may be a description of the initial rifting that took place globally at the ocean ridges and even within continents (Reed 2000; Clarey 2020). It seems likely that this was the moment when the global tectonic plates first formed as individual, moving pieces. Curvilinear cracks opening up all over the earth may have been initiated by a miraculous event. Whatever their origin, it appears that these long rifts may have allowed the cold, dense, pre-Flood ocean crust to begin to subduct in some places.

Some creationists have suggested that a source of water for the fountains may have been the upper mantle. Studies indicate that indeed there are massive quantities of water disseminated within the minerals of the upper mantle in a layer called the transition zone (440 to 660 kilometers or 270 to 400 miles below the earth's surface) (Fei et al. 2017). Secular scientists estimate that just as much water is trapped in the minerals at these depths as there is in all the oceans. Ringwoodite and wadesleyite, the two most common minerals at those depths, are estimated to contain 1-2% water by weight. Although it's possible that a tiny amount of this water, and even limited shallower mantle water, was released as the fountains burst at the onset of the Flood, it is highly unlikely that the amount was large enough to make any significant contribution to the total water inventory at the earth's surface. The reason is that this water is part of the crystal structure of the minerals comprising these rocks residing hundreds of kilometers below the surface. For this water to become water vapor or liquid water, the rocks themselves somehow would need to rise to near the earth's surface and melt. Even in the framework of CPT, it is highly unlikely any significant amount of rock from the transition zone was transported to near the earth's surface. While it is true that today about 95% of the gases released by volcanoes are water and carbon dioxide, demonstrating that volcanoes do release water, this water originates in the highly restricted zones of partial melting in the asthenosphere immediately below mid-ocean ridges and in subduction zones where water carried down by the subducting plate is released and reduces the melting temperature of the rock there.

Obviously, the intense rainfall described as the opening of the "windows of heaven" contributed to the flooding of the pre-Flood landmasses. And some of this rainfall was likely from the water coming out of the volcanic eruptions as described above. But, because newly created oceanic lithosphere is hot, less dense, and more buoyant, the CPT model provides a potentially even bigger source for water for the flooding of the continents. After its formation at the ridges, freshly formed, low-density oceanic lithosphere rises and raises the top of the seafloor from below, displacing ocean water and forcing it on land. Creationists have calculated that this elevated seafloor could have raised the global sea level by 1.6 kilometers (Snelling 2014c) to 2.0 kilometers (Baumgardner 1986). greatly helping flood the continents. If the bottom of the bathtub is raised, the water will rise. If the bottom of the ocean is raised, sea level will rise. The more newly created ocean lithosphere, the more the ocean level was pushed upwards. This process is what likely caused the water to finally go over the top of the highest hills as the Flood reached the 150th day.

Rapid movement of the plates during runaway subduction also supplied innumerable tsunami-like waves to wash across the land, helping deposit blanket-type sediments across continents. Numerical modeling by Baumgardner has found that repetitive tsunami waves, caused by rapid plate movement, could result in water accumulation more than a kilometer (0.62 mile) deep on the continents, contributing to the flooding (Baumgardner 2018). The runaway subduction model also provides a mechanism to lower the continental crust about two miles in the proximity of the subduction zones, causing more extensive flooding of the land and creating room for thousands of feet of sediment (Baumgardner 1994a).

In summary, plate motion provided two of the major potential sources of water to inundate the pre-Flood land. First, the rapid creation of new seafloor during the Flood caused the ocean levels to rise up to 2 km higher. Second, the tsunamis generated by plate motion (subduction especially) could have added another kilometer of elevation to the water levels across the continents. Collectively, these two sources of water can account for the flooding of even the highest pre-Flood hills.

Finally, subsequent cooling of the newly created ocean lithosphere later in the Flood year (after Day 150) explains the lowering of the floodwaters. The 100 km (62-mile)-thick, newly created ocean lithosphere slowly cooled and sank, lowering the bottom of the oceans and helping to draw the water off the continents and back into the ocean basins. What happened to the floodwaters? They are back in today's ocean basins. Remember, the Flood did not have to cover pre-Flood land that was as high as Mt Everest. Those mountains and most others were pushed up toward the end of the Flood. The highest hills in the pre-Flood world were likely much less than people think, maybe only 5,000 feet above the pre-Flood ocean level (Clarey 2020).

3. Progressive Flood Model Explains Why the Plates Are Moving Slowly Today

It was the density contrast of the heavy, cold, original ocean crust (the lithosphere) that allowed the runaway subduction process to begin and continue. The density difference served essentially as the fuel (Baumgardner 1994a). The runaway process continued until the original oceanic lithosphere was consumed. There was no geophysical means or reason to stop the rapid plate motion until the density contrast was fully alleviated. At that moment, the newer, more buoyant lithosphere ceased subducting, bringing plate motion to a virtual standstill. As a consequence, today we only witness small, residual plate motions of centimeters per year.

4. Progressive Flood Model Explains the Conditions Necessary for the Ice Age

Finally, CPT provides a mechanism for the Ice Age that occurred at the end of the Flood. A hot, newly formed ocean seafloor covering 70% of the world would have provided tremendous amounts of heat energy to the ocean waters above. This would have raised the overall temperature of the ocean and caused a greater amount of evaporation, resulting in staggering amounts of precipitation (Oard 2004). The increased volcanic activity from the subduction zone volcanoes and the unique chemistry of subduction zone magmas within the Ring of Fire and elsewhere late in the Flood would have placed huge volumes of ash and aerosols into the atmosphere, cooling the climate most noticeably in the higher latitudes (Oard 2004).

The distinctive chemistry of the magmas generated by the melting of subducted water-laden, siliceous sediments in subduction zones provides the perfect recipe for explosive, ash-rich eruptions. These types of volcanoes (stratovolcanoes) are highest in silica, making them thicker and more explosive (Raymond 1995). The net result of hotter oceans and tremendous silica-rich volcanic activity brought on from plate motion would be enough to start a widespread Ice Age. The hotter water provided higher evaporation, and the ash-rich volcanoes that erupted continually over many years provided the aerosols to cool the earth, especially in the higher latitudes.

In contrast, the most common type of volcanoes across the majority of the ocean basins have basalt-rich magmas (similar to shield volcanoes) and are less capable of producing the ash-rich explosions necessary to generate sun-blocking aerosols and ash (Raymond 1995). This is another reason runaway subduction was an important part of the Flood mechanism. Only subduction provides the magma chemistry necessary to make stratovolcanoes and explosive ash-rich volcanoes. Finally, as the ocean water slowly cooled and volcanic activity diminished in the centuries after Flood, the Ice Age would have ended as abruptly as it began (Oard 2004).

5. Progressive Flood Model Verified by $^{87}Sr/^{86}Sr$ Ratios

CPT and a progressive Flood model is also supported by marine sedimentary strontium ratios. In his classic textbook on isotope geology, Faure (1986, p. 187) explained that the $^{87}Sr/^{86}Sr$ value found in rocks is controlled by the interaction of three sources: (1) young volcanic rocks or newly created seafloor, (2) weathering of old continental crust, and (3) Phanerozoic marine carbonate rocks. Furthermore, Veizer and Mackenzie (2013) argue that the $^{87}Sr/^{86}Sr$ is primarily controlled by the production of new oceanic crust and by river influx from the continents. Higher $^{87}Sr/^{86}Sr$ values are primarily caused by increased weathering of the continental crust, and its influx into the oceans. Lower $^{87}Sr/^{86}Sr$ values are likely from the formation of new oceanic crust and possibly hydrothermal activity. Faure (1986, p. 191) attributed the lower $^{87}Sr/^{86}Sr$ values in the Mesozoic to increased rates of seafloor spreading and the opening of the Atlantic Ocean. We conclude that the $^{87}Sr/^{86}Sr$ values found in the rocks of the Phanerozoic (all six megasequences) are intimately connected to the production of new seafloor (Cupps and Clarey 2020).

Figure 31 shows that the $^{87}Sr/^{86}Sr$ ratio progressively dropped throughout the Phanerozoic until reaching its lowest values in the Zuni megasequence (about the Jurassic level). This $^{87}Sr/^{86}Sr$ ratio curve does, in fact, match the rock data mapped globally as both peak simultaneously in the Zuni megasequence, one low and one high (an inverse relationship) (Cupps and Clarey 2020). What would cause the rock data and the Sr ratios to track each other so closely?

We suggest the changes in $^{87}Sr/^{86}Sr$ values are primarily driven by the production of new seafloor during the Flood year. This best explains the lowering of the $^{87}Sr/^{86}Sr$ values that started in the late Cambrian and continued through the Paleozoic and Mesozoic, and even through the Cenozoic, and its return to near 0.710 today (Fig. 32). Hot, new seafloor is more buoyant and thicker and pushes up the ocean water from below. So, the more that new seafloor is created, the more the ocean level rises. The observed gradual lowering of the $^{87}Sr/^{86}Sr$ values can be directly correlated with the rapid production of new ocean lithosphere during the Flood year. During deposition of the earliest megasequences, its likely only small amounts of new seafloor were added, confirming our earlier interpretation. This pushed sea level up slightly at the beginning the Flood (and began to lower the Sr ratio) while only affecting limited parts of the continents (Sauk and Tippecanoe sequences), matching what the rocks show (Clarey and Werner 2017). As more seafloor was created in the Late Paleozoic and into the Mesozoic on a massive scale, it pushed the Flood water higher and higher until it reached its highest level (and lowest $^{87}Sr/^{86}Sr$ values) during the Zuni megasequence (Fig. 32). $^{87}Sr/^{86}Sr$ ratios again rose again during the Tejas as less seafloor was created and sea level dropped.

The $^{87}Sr/^{86}Sr$ values track with the production of new seafloor, which caused the water levels to rise progressively, matching the patterns of the megasequences also. Only CPT can explain this near perfect conformity of the progressive flooding of the continents, the progressive production of new seafloor and the progressive shifts in the $^{87}Sr/^{86}Sr$ ratio. While each data set can be assessed independently, they are directly (or inversely) related to one another, resulting in simultaneous patterns.

VI. CONCLUSION

Nearly 3000 stratigraphic columns across five continents document

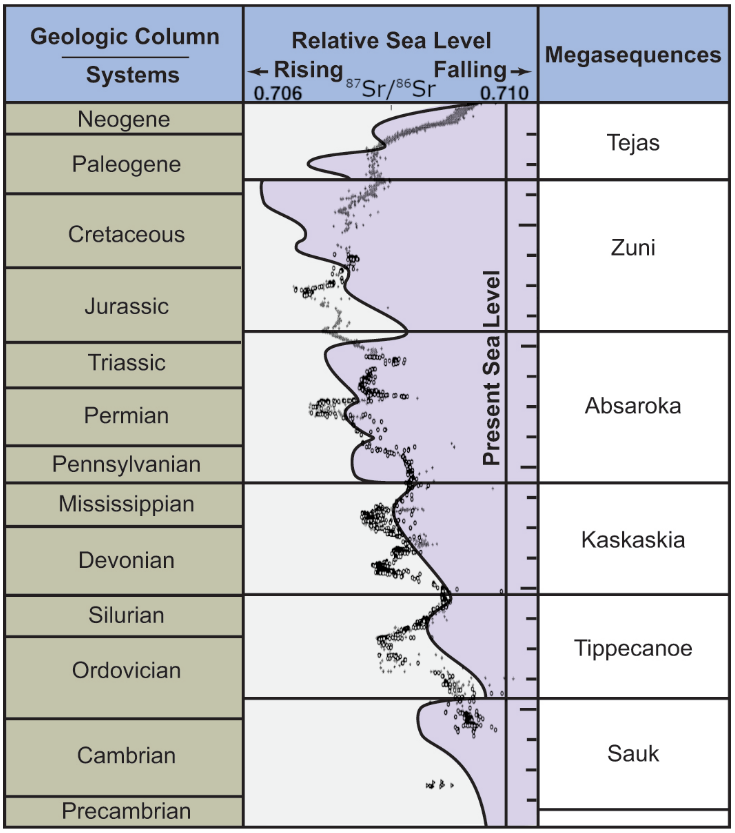

Figure 32. The $^{87}Sr/^{86}Sr$ ratio throughout the Phanerozoic superimposed on the diagrammatic sea level curve (Fig. 13). Note the close track of each. Lower $^{87}Sr/^{86}Sr$ ratios are directly caused by an increase in the amount of seafloor created. More seafloor, lower $^{87}Sr/^{86}Sr$ ratios (modified from Cupps and Clarey 2020).

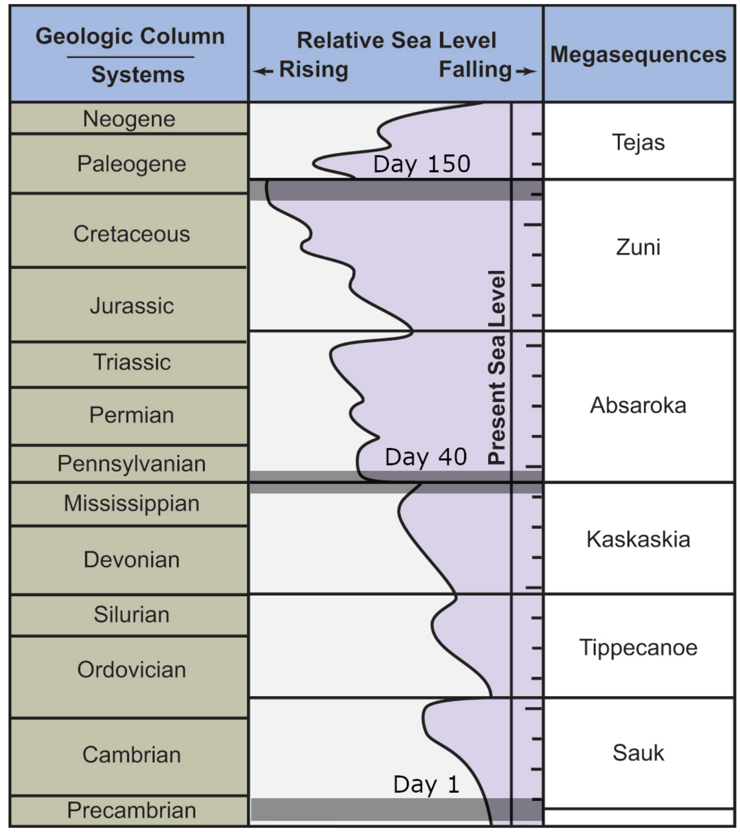

Figure 33. Progressive Flood model (diagrammatic) sea level curve and megasequences chart, showing Days 1, 40, 150 of the global Flood (modified from Johnson and Clarey 2021).

a progressive Flood that corresponds to the Biblical text and the predictions of CPT. Data indicate the Flood started out with minimal flooding of the continents for the first 40 days but increased steadily until peaking at about the K-Pg boundary on Day 150 (Fig. 33). CPT provides the most viable mechanism to explain this sedimentary rock pattern as it provides a method to Flood the continents through the progressive production of new seafloor. The sedimentary record and CPT harmonize with the account of the Flood in Genesis.

We conclude that the Flood began with tremendous volcanic activity and rifts that opened across the globe, creating individual tectonic plates that then began to move (Fig. 33). Only limited flooding and minimal plate tectonic activity (seafloor spreading) took place during deposition of the first three megasequences. This is supported by the lack of any preserved seafloor prior to the 4th megasequence (Absaroka). However, this early plate activity, although limited in extent, did generate numerous tsunamis waves. This resulted in the flooding of continental shallow seas and the burial of billions of marine fossils.

By Day 40 of the Flood, the Biblical text reveals that the Ark began to float, implying that significant portions of the land must have been impacted also. We interpret this as the start of the Absaroka megasequence in the rock record (Fig. 33). Here, we find the first significant numbers of land animal fossils and the first extensive coal seams. More extensive plate tectonic activity was also occurring during the Absaroka, including the production of much new seafloor. In fact, the oldest preserved seafloor only extends back to the Absaroka megasequence. It was this new seafloor that pushed the water up high enough to begin flooding the land and floating the Ark. Most of the plants and animals in the Absaroka megasequence reflect coastal, wetland and lowland environments.

The continual production of vast amounts of new seafloor creation continued into the Zuni megasequence, pushing the tsunami waves to their highest level and maximum extent. The stratigraphic data support this interpretation as the Zuni has the highest surface area coverage and the most volume of any megasequence globally. The end of the Zuni was likely about Day 150 of the Flood (Fig. 33). Furthermore, the Bible tells us the water crested at 15 cubits over the tops of the highest hills. Fast-moving tsunami waves wiped everything off the highest hills down to the bare crust. This left many regions of the continents devoid of sedimentary rock because 15 cubits of water cannot leave behind deposits thicker than several meters. After 4500 years, most of these thin sediments were likely eroded away, leaving just a few remnants. These are the so-called shield areas today, like the Canadian Shield, the West African Shield and the Brazilian Shield.

As the Flood year advanced, CPT continued making new seafloor into the Tejas. However, at this point the water began to slowly subside as God brought a wind to blow the water from the land (Gen. 8:1). In addition, the oldest newly created ocean crust began to cool and sink, deepening the ocean basins. The net result was a steady diminishing in water level at the onset of the Tejas, steadily draining water off the land (Fig. 33). This sudden shift to the offshore resulted in the accumulation of the Whopper Sand in the Gulf of Mexico and the global deposition of flora and fauna from the highest hills. Many flowering plants and large mammals that lived at higher elevation were buried in these rock layers. This shift in water flow direction also resulted in massive coal deposits trapped up against mountain fronts during the Tejas, like the Powder River basin coals, and also those pushed offshore Asia.

In many locations, the lower Flood boundary is at the base of the Sauk megasequence, starting with Cambrian strata. But in other places, Flood deposits started below in the late Precambrian (Pre-Sauk megasequence). And as the Flood water progressed upwards, reaching higher and higher pre-Flood elevations for the first time, it sometimes deposited Absaroka and/or Zuni megasequence sediments directly on basement, with no earlier Flood sedimentation beneath.

We pick an upper Flood boundary near the top of the Neogene (Upper Cenozoic) for several reasons, but especially for two compelling reasons: 1) ocean lithosphere was still being actively produced throughout the Tejas megasequence (Paleogene and Neogene) with no indications that this mechanism slowed until the Pliocene, and 2) limestone rocks and other marine sediments were deposited continually from the Cretaceous System (Zuni megasequence) upward through the Miocene and even Pliocene (Neogene) across Turkey, Syria, Iraq, much of Europe, and the Middle East. These observations demonstrate that the mechanism for the Flood was not over at the K-Pg, and that the waters had not drained off the most likely locations for the Tower of Babel until late in the Neogene or after.

The progressive Flood model also explains the near stoppage of the of the plates today as the original cold oceanic lithosphere has all been subducted away. By removing the density contrast necessary for continued runaway subduction, the driving mechanism for CPT vanished.

Furthermore, the newly created hot seafloor caused the ocean water to absorb considerable heat, increasing the ocean's average temperature significantly. The hotter ocean produced tremendous evaporation for hundreds of years after the Flood year. And the subduction zone volcanoes that peaked at the end of the Flood, and after, provided the aerosols necessary to cool the atmosphere, causing snow to fall in the high latitudes. These two conditions, caused by CPT, brought on the Ice Age. It was the steady build-up of snow and ice that lowered sea level by 120 meters below today's level, creating temporary land bridges to nearly every continent. This allowed humans and large animals to repopulate the globe after the Flood.

Finally, shifts in the global $^{87}Sr/^{86}Sr$ ratio confirm that rapid production of new seafloor was a major controlling factor in the progressive Flood, harmonizing with our interpretation.

In conclusion, the progressive Flood model, utilizing CPT as the mechanism, explains why the water rose higher though the production of new seafloor during the Flood year, resulting in the step-by-step flooding of the continents. The results of the flooding are recorded directly in the rock record of the megasequences. Flood rocks show a steady increase in surface extent and in thickness, until peaking nearly simultaneously on all continents, and then a universal sudden shift to the offshore. CPT provides the best explanation for the near stoppage of the tectonic plates today and the conditions for the Ice Age after the Flood.

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THE AUTHORS

Timothy L. Clarey earned a Ph.D. and B.S. (summa cum laude) from Western Michigan University, and a M.S. from University of Wyoming, all in geology. He worked for nearly a decade as an exploration geologist for Chevron and then spent 17 years as a public college professor. His publications include numerous articles on the geology of the Rocky Mountain region. He has written and/or co-authored six books, including *Dinosaurs: Marvels of God's Design* (Master Books). His latest book, *Carved in Stone: Geological Evidence of the Worldwide Flood*, was published by ICR in 2020. Tim currently works as a Research Scientist for ICR.

Davis J. Werner is an undergraduate student, with the goal of earning a degree in geology. He has worked at ICR since 2015 as a Research Associate.