



NOAH'S ARK AND THE GLOBAL FLOOD; FACT-FICTION-SCIENTIFIC?

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INTRODUCTION

Some people - Christians and non-Christians alike - find various portions of the Bible difficult to understand or believe primarily due to plain ordinary unbelief and/or alleged modern secular scientific viewpoints (without God, i.e., evolution). Not surprisingly, a portion of Scripture that many people find either unbelievable from a Scriptural point-of-view or impossible from a secular scientific perspective is the biblical account of Noah's Ark and a global Flood that destroyed the earth and all living land and air creatures that were not on the Ark. As an example, a well-known Christian apologetics organization recently had the opportunity to staff a "*Creationist*" booth at an annual convention of the National Education Association (NEA) in Los Angeles. Interestingly, the most common topic that was consistently used by doubters to ridicule the Bible was Noah's Ark and the global Flood. Some of the typical questions were:

- How did Noah fit all of the animals including dinosaurs on board?
- Where did the floodwaters come from, and where did they go?
- Where's the evidence of a global Flood?
- How could a boat that big be made from wood and not self-destruct in the Flood?
- And so on.....

Interestingly, the modern view of Noah, the Ark and the global Flood is presented in some churches and the secular media as a cute fairy tale (Figure 1), a mythical tale, or placed in the category of unscientific. An example of this scientific disbelief is summarized by Robert R. Cargill, UCLA Center for Digital Humanities:

“Simply put: There is no evidence whatsoever for a worldwide flood. In other words, it’s impossible. There is not enough water in the earth’s atmospheric system to even come close to covering all of the earth’s landmasses. It is time for Christians to admit that some of the stories in Israel’s primordial history are not historical”¹

Even more disappointing is the fact that out of 106 colleges in the Christian College Coalition, only 5 teach the creation account as written and literal history.²



Figure 1: Noah's Ark is often presented as a cute fairy tale

Nevertheless, can the biblical account of the global Flood be classified as biblically, historically and scientifically accurate, particularly when secular science confidently declares there is no evidence to support that a global Flood ever happened? With these thoughts in mind, let's begin this discussion by looking at the following considerations - (1) Geological Record, (2) Archaeological Discoveries, (3) Biblical Account, (4) Noah's Ark, (5) Flood Waters, (6) Flood Geologic Dynamics, (7) Flooding The Continents, and then (8) Where Did The Waters Go - remembering that the global Flood has never been

disproved, it was *arbitrarily* rejected in the 1700's and 1800's by secular intellectuals in favor of slow processes over millions of years.

GEOLOGICAL RECORD

If the Genesis Flood really occurred, it should leave an abundance of evidence as we read in Genesis 7 that:

- All of the fountains of the great deep were broken up and poured out water from inside the earth for 150 days (5 months)
- It rained torrentially and globally for 40 days and 40 nights
- The waters prevailed and greatly increased on the earth
- All the high hills and mountains under the whole heaven were covered
- Also, 2 Peter 3:5-6 states; *the world that then was, being overflowed with water, perished*. Therefore, all air-breathing life on land perished

So, what evidence would we look for? Wouldn't we expect to find billions of buried fossilized plants in rock layers all over the earth, immense transported sediment layers covering vast areas and altered layers of rock that show testimony of rapidly moving floodwaters? Not surprisingly, that's exactly what we find. As a result, let's look at six main geologic evidences that graphically testify to a global Flood.

EVIDENCE #1: Fossils of sea creatures high above sea level due to the ocean waters having flooded over the mountains

We find fossils of *sea creatures* in rock layers that cover all the continents. For example, marine fossils are found in most of the rock layers in the walls of the



Figure 2. Kaibab Limestone, Grand Canyon

Grand Canyon, including the topmost layer known as the Kaibab Limestone,³ located 7,000 to 8,000-feet above sea level (Figure 2). Fossilized shellfish (ammonites) are even found in the limestone beds of the Himalaya mountains of Nepal and other high mountains as well.⁴ All geologists agree that ocean waters must have buried these marine fossils in the Himalayan limestone beds.

EVIDENCE #2: Rapid burial of plants and animals

We find extensive fossil graveyards (Figure 3) and exquisitely preserved fossils in massive global graveyards that indicates rapid burial on a massive scale. For example, billions of Nautiloid fossils (along with other marine creatures) are found in a layer within the Redwall Limestone of the Grand Canyon⁵ that



Figure 3. Fossil Graveyards Indicate Mass Burials

continues for 180 miles across northern Arizona and into southern Nevada, covering an area of at least 10,500 square miles. This layer was clearly deposited catastrophically by an enormous flow of sediment (mostly lime sand and silt). Although there are many examples of these mass graveyards around the world, several notable examples are:

- Hundreds of thousands of marine creatures are buried with amphibians, spiders, scorpions, millipedes, insects, and reptiles in fossil graveyards in Montceau-Mines, France⁶
- At Fossil Bluff on the north coast of Tasmania, many thousands of marine creatures were buried together in a broken state. This fossil bed continues across Europe to the Middle East as well as into the Midwest of the USA, forming a global-scale fossil graveyard⁷

- The immense chalk and coal beds of Europe and the United States testify of catastrophic destruction and burial

Not surprisingly, these large-scale fossil graveyards also indicate the apparent speed of burial as many creatures were so rapidly buried and fossilized under catastrophic flood conditions that they were exquisitely preserved. This is evidenced by fine details such as fins and eye sockets that have been preserved, and in some cases, minute detail. Also, these fossil graveyards often consist of mixtures of marine and land-dwelling creatures indicating the waters of this global cataclysm swept over both the oceans and the continents.

EVIDENCE #3: Rapidly deposited sediment layers spread across vast areas

Rock layers can be traced all the way across continents, even between continents, and physical features in those strata indicate they were deposited rapidly. For example, the chalk beds of England (the White Cliffs of Dover, Figure 4) can be



Figure 4. Chalk Beds of England

traced westward across England and appear again in Northern Ireland. In the eastward direction from Dover, the same chalk beds can be traced across France, the Netherlands, Germany, Poland, southern Scandinavia and other parts of Europe to Turkey, then to Israel, Egypt and Kazakhstan.⁸ In the Grand Canyon, inclined (sloping) layers within the Coconino Sandstone are testimony to 10,000 cubic miles of sand being deposited within days by huge water currents (and also covering 200,000 square miles eastward across adjoining states),⁹ and the

Tapeats Sandstone and Redwall Limestone can be traced across the entire United States and up into Canada and even across the Atlantic Ocean to England.

EVIDENCE #4: Sediment transported long distances

Sediments in widespread, rapidly deposited rock layers were eroded from distant sources and carried long distances by fast-moving water. For example, the sand in the Coconino Sandstone¹⁰ of the Grand Canyon in Arizona was eroded and transported from the northern portion of what is now the United States and Canada. Furthermore, water current indicators (such as ripple marks called Varves, Figure 5) preserved in rock layers show that water currents were



Figure 5. Varves

steadily flowing from northeast to southwest across all of North and South America, which, of course, is only possible over weeks during a global Flood.

EVIDENCE #5: Rapid and no erosion between strata

In many places around the world there is visible evidence of rapid erosion, or even of no erosion at the boundaries between sedimentary rock layers. Flat, *knife-edge boundaries* between rock layers indicate rapid continuous deposition of one layer after another with no time for long periods of erosion. For example, there is no evidence of millions of years of erosion (using alleged evolutionary timescales) in the flat boundary between two well-known layers of the Grand Canyon, the Coconino Sandstone and the Hermit Formation¹¹ (Figure 6). Another

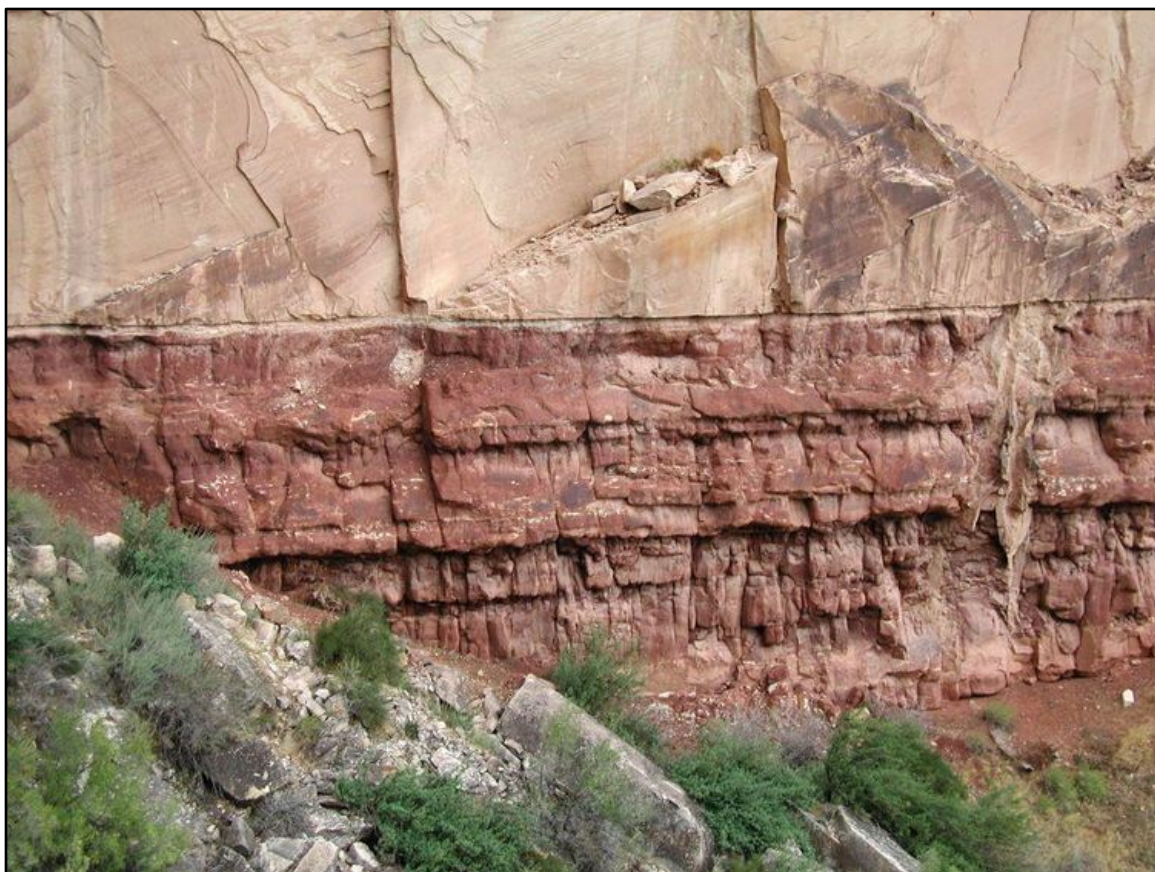


Figure 6. Flat Boundary Between the Coconino Sandstone and Hermit Formation

impressive example of flat boundaries at the Grand Canyon is the Redwall Limestone and the strata beneath it. Remember that alleged slow evolutionary geologic processes would require hundreds of millions of years to deposit successive sediment layers and would show remnants of slow weathering and erosion which is not seen in Figure 6 and many other similar examples.

EVIDENCE #6: Rock layers folded, not fractured

Rocks do not normally bend as they will break loose or fracture because they are hard and brittle.¹² But in many locations, we find whole sequences of strata that were bent without fracturing indicating that the rock layers were rapidly deposited and folded while still wet and pliable before final hardening. For example, the rock strata in Figure 7 are located in Basque Country, France, and is folded at multiple right angles (90-degrees) without evidence of breaking and/or fracturing. Yet, this folding could only have occurred after the visible strata layers had been deposited while they remained wet, soft and pliable, and then folded by earth movements (uplifting).



Figure 7. Folded Rock Strata, Basque Country, France

ARCHAEOLOGICAL DISCOVERIES

A common human trait is the passing of information from one generation to the next, typically involving past events. Several examples worth mentioning are America defeating its enemies in World War II, the first American astronauts (Apollo 11) to successfully land and walk on the Moon, the significance of 911 and even the biblical account of the global Flood and Noah's Ark. Recent archaeological discoveries have underscored the fact that the biblical global Flood is also mentioned in numerous other cultures on earth as evidenced by a study completed by Dr. John Morris of the Institute for Creation Research.¹³

The study indicates that there are more than 200 accounts of global floods from nearly every ancient culture on earth, and the similarities with the biblical account are astounding. A comparison of the common details is more than similar as follows:

- | | |
|--|-----|
| ○ Was there a favored family | 88% |
| ○ Were they forewarned | 66% |
| ○ Was the flood due to the wickedness of man | 66% |
| ○ Was the catastrophe only a flood | 95% |
| ○ Was the flood global | 95% |
| ○ Did the survivors land on a mountain | 57% |

- Were birds sent out 35%
- Was a rainbow mentioned 7%
- Did the survivors offer a sacrifice 13%
- Specifically, were eight persons saved 9%

The obvious conclusion is straightforward and applicable. A common belief points towards a root event that happened in history and the previous study by Dr. Morris demonstrates the biblical global Flood account must be one of the most well-known events in human history as similar details have been preserved by so many ancient civilizations on earth. In addition to the fact that there are numerous historical accounts of a global Flood from many ancient civilizations, it should also not be surprising that modern archaeology has discovered ancient artifacts that detail a globe-covering catastrophe with parallel details to the biblical account that is not just found among the Israelites (who came on the scene some 700 years after the floodwaters receded). So, let's look at three of the most famous extra-biblical historical Flood accounts from archaeological discoveries and notice the *similarities* to the biblical account.

EPIC OF GILGAMESH

The Epic of Gilgamesh is likely the most famous extra-biblical account of the



Figure 8. Tablet XI From the Epic of Gilgamesh

global Flood and is contained on twelve large tablets written in the Sumerian Cuneiform language. The tablets were discovered in 1853 while excavations were underway at the library of the ancient Assyrian capital of Ninevah that date back to around 650 B.C. Linguistic experts believe that the account was composed well before 2,200 B.C. and was compiled from material that was much older than that date¹⁴ as the Sumerian Cuneiform writing has been estimated to go as far back as 3,300 B.C.¹⁵ It is the 11th Tablet (Figure 8) of the Epic of Gilgamesh that depicts:

*“How the gods determined to send a flood to destroy the earth, but one of them, Ea, revealed the plan to Utu-napishtim whom he instructed to make a boat in which to save himself and his family. He orders him to take into it birds and beasts of all kinds. Utu-napishtim obeyed and when all were aboard and the door shut the rains descended and all of the rest of mankind perished. After six days the waters abated and the ship grounded. The first bird released flew to and fro but found no resting-place. A swallow likewise returned but finally a raven that had been sent out did not return showing that the waters were receding.”*¹⁶

BABYLONIAN ARK TABLET

The Babylonian Ark Tablet (also called the Ark Tablet, Figure 9) was introduced to the public in 1872 after being excavated at Nineveh in present-day Iraq. The circular tablet is inscribed in Cuneiform, is dated to around 1900-1700 B.C., and is



Figure 9. Babylonian Ark Tablet

a Babylonian account of a flood in which the god Enki instructs Atrahasis (the Babylonian Noah) on how to build an ark.¹⁷ Following is a summary of the highlights of the tablet:¹⁸

- A god instructed a man to build a giant boat about two-thirds the size of a soccer field
- The boat was to be reinforced with wooden ribs (Genesis 6:14)
- The boat was to be covered with bitumen (Genesis 6:14)
- The animals were to board the boat two-by-two (Genesis 7:9)
- The purpose of all of these things was to survive a devastating flood (Genesis 6:17)

EPIC OF ATRA-HASIS

This is an eighteenth century B.C. Akkadian epic (Figure 10), is named after its human hero, and can be dated by its scribal identification to the reign of Hammurabi. The Atra-Hasis story also exists in a later fragmentary Assyrian version, the first one having been discovered in the library of Ashurbanipal and



Figure 10. Epic Of Atra-Hasis

is inscribed in Akkadian, the language of ancient Babylon.¹⁹ The epic offers many details that are similar to the Bible's Creation and Flood account. Specifically, the epic recounts:²⁰

- A great flood (Genesis 6-8)
- A hero instructed to build a boat for him and the animals to survive (Genesis 7:1-2)
- Specifically, that animals entered two-by-two (Genesis 7:2-9)

Although there are many other applicable and unique biblical artifacts that have been excavated in recent times, the uniqueness of these artifacts provides real, tangible, and visual confirmation to the accuracy of the Genesis global Flood text. Modern archaeology continues to highlight the accurate biblical descriptions of civilization after civilization, of city after city, of personality after personality, and account after account as illustrated by the following quote:

*"It could be said that there has never been so much skepticism and doubt in the biblical account. Yet at the same time, there has never been so much corresponding proof! A vast window into real biblical history is rapidly opening up through archaeology"*²¹

British Museum

BIBLICAL ACCOUNT

As an alternative to the pessimistic secular scientific perspectives of Noah and the global Flood (Ark was not large enough for all of the animals, the Flood was a local event in the Mesopotamian Valley, etc.), let's look at what the Bible clearly describes about Noah, the Ark, and a global Flood with the intent to increase our understanding of Genesis 6-9 and highlight the Scriptural and scientific elements of the account. Additionally, remember that 1 Peter 3:15 admonishes Christians to - *"always be ready to give a defense to everyone who asks you a reason for the hope that is within you"*). Let's begin with the narrative in Genesis 6:5-8 (*All following biblical quotes are from the New English Translation (NET) Bible which is a direct translation from the best currently available Hebrew, Aramaic and Greek texts*).

GENESIS 6:5-8

But the LORD saw that the wickedness of mankind had become great on the earth. Every inclination of the thoughts of their minds was only evil all the time. The LORD regretted that he had made mankind on the earth, and he was highly offended. So, the LORD said, "I will wipe mankind, whom I have created, from the face of the earth – everything from mankind to animals, including creatures that move on the ground and birds of the air, for I regret that I have made them."

But Noah found favor in the sight of the LORD. This is the account of Noah. Noah was a godly man; he was blameless among his contemporaries. He walked

with God. Noah had three sons; Shem, Ham, and Japheth. The earth was ruined in the sight of God; the earth was filled with violence. God saw the earth, and indeed, it was ruined, for all living creatures on the earth were sinful. So, God said to Noah, "I have decided that all living creatures must die, for the earth is filled with violence because of them. Now I am about to destroy them and the earth." But Noah found favor in the sight of the LORD.

Every inclination: People had taken their God given capacities and used them to devise evil. Evil had become dominate all the time. The words "every" and "only" emphasize the depth of human evil at this time. The entire human race had become corrupt.

On the earth: Earth is singular, so this can denote the entire earth. This can also be a rebuttal to the "local flood" theory.

Mankind to animals: Stresses the extent of the judgment in creation. The Hebrew text says "from man to beast, to creatures, and to birds of the air." The use of presuppositions stresses the extent of the judgment in creation.

I regret that I have made them: God was embarrassed, grieved, or sorry that He had made them.

The earth was ruined: Mankind's sin is viewed as having an adverse effect on the entire earth. Included are injurious testimony, deadly assault, murder, and rape.

All living creatures must die: All flesh is used of mankind and the animals, and all were guilty of moral failure. The animals were morally contaminated because of their association with sinful mankind.

Noah found favor: God condemns the human race, but He is pleased with Noah. God shows kindness and mercy towards Noah's blameless and righteous character.

GENESIS 6:14-22

"Make for yourself an ark of gopher wood. Make rooms in the ark, and cover it with pitch inside and out. This is how you should make it: The ark is to be four hundred fifty feet long, seventy-five feet wide, and forty-five feet high. Make a roof for the ark and finish it, leaving eighteen inches from the top. Put a door in the side of the ark, and make lower, middle, and upper decks. I am about to bring flood waters on the earth to destroy all the living creatures that have the breath of life in them. Everything that is on the earth will die, but I will confirm my covenant with you. You will enter the ark – you, your son's, your wife, and your son's wives with you. You must bring into the ark two of every kind of living creature from all flesh, male and female, to keep them alive with you. Of the birds after their kinds, and of the cattle after their kinds, and of every creeping thing of the ground after their kinds, two of every kind will come to you so you

can keep them alive. And you must take for yourself every kind of food that is eaten, and gather it together. It will be food for you and for them.” And Noah did all that God commanded him – he did indeed.

Gopher wood: The Hebrew word is “goper” which is often translated into a type of cypress wood. Teak and cedar type woods were also common at that time. The exact nature of the wood involved is uncertain, however, it was probably a resinous type wood.

Cover it with pitch: To cover, to smear, to caulk.

450’ long, 75’ feet wide, and 45’ high: Some translations use 300 cubits long, 50 cubits wide, and 30 cubits high. Most authorities assume an Old Testament cubit is about 18-inches long, hence the measurements of 450’-75’-45’.

Ark and finish it, leaving 18-inches from the top: Leave an 18-inch opening from the top for a window for light (and potential ventilation).

I will confirm: Anticipates the unconditional promise made to mankind following the Flood.

Two of every kind will come to you: The animals came to Noah. God took care of the details.

He did indeed: Underscores the obedience of Noah to **all** that God said.

GENESIS 7:1-5

The LORD said to Noah, “Come into the ark, you and your household, for I consider you godly among this generation. You must take with you seven of every kind of clean animal, the male and its mate, two of every kind of unclean animal, the male and its mate, and also seven of every kind of bird in the sky, male and female, to preserve their offspring on the face of the earth. For in seven days I will cause it to rain on the earth for forty days and forty nights, and I will wipe from the face of the ground every living thing that I have made.” And Noah did all that the LORD commanded him.

Seven of every kind of clean animal: Seven pairs. An extra five pairs would be used for sacrifice.

Two of every kind of unclean animal: Male and female to continue the species.

For in seven days: It took seven days to load the animals on the Ark before it started to rain. This also gave mankind an additional seven days to repent.

I will cause it to rain: Many scholars believe that no rain had fallen before this time, so it is likely that rain was an unknown event.

Noah did all that the LORD commanded him: No hesitation, Noah obeyed God!

GENESIS 7:6-16

Noah was six hundred years old when the flood waters engulfed the earth. Noah entered the ark along with his son's, his wife, and his son's wives because of the floodwaters. Pairs of clean animals, of unclean animals, of birds, and of everything that creeps along the ground, male and female, came into the ark to Noah, just as God had commanded Noah. And after seven days the floodwaters engulfed the earth. In the six hundredth year of Noah's life, in the second month, on the seventeenth day of the month – on that day all the fountains of the great deep burst open and the floodgates of the heavens were opened. And the rain fell on the earth forty days and forty nights. On that very day Noah entered the ark, accompanied by his son's Shem, Ham, and Japheth, along with his wife and his son's three wives. They entered, along with every living creature after its kind, every animal after its kind, every creeping thing that creeps on the earth after its kind, and every bird after its kind, everything with wings. Pairs of all creatures that have the breath of life came into the ark to Noah. Those that entered were male and female, just as God commanded him. Then the LORD God shut him in.

Six hundred years old: The average age prior to the flood was 912 years old (omitting Enoch).

Came into the ark to Noah: God directed the animals to Noah.

All the fountains of the great deep burst open: Subterranean waters bursting upward. The significance is that in this judgment, God was returning the world to its earlier condition of being enveloped with water.

Floodgates of the heavens were opened: Notice that “all the fountains of the great deep bursting open” started the judgement with the “floodgates of the heavens” starting next.

Forty days and forty nights: Forty 24-hour days. The significance of the number 40 in the Bible is significant as it is regularly used to describe a trial culminating in victory. Examples are Israel wandering in the desert for 40 years, Moses 40 days on Mt. Sinai receiving the law, Elijah 40 days on Mt. Horeb, Jonah gave Ninevah 40 days to repent, Christ spent 40 days in the wilderness being tempted, and the disciples spent 40 days with the LORD between the resurrection and ascension.

Then the LORD God shut him in: The LORD closed and sealed the door. The single door in the Ark (Genesis 6:16) is a reminder that only Jesus is the door to salvation (John 10:9 and John 14:6).

GENESIS 7:17-24

The flood engulfed the earth for forty days. As the waters increased, they lifted the ark and raised it above the earth. The waters completely overwhelmed the

earth, and the ark floated on the surface of the waters. The waters completely inundated the earth so that even all the high mountains under the entire sky were covered. The waters rose more than twenty feet above the mountains. And all living things that moved on the earth died, including the birds, domestic animals, wild animals, all the creatures that swarm over the earth, and all mankind. Everything on dry land that had the breath of life in its nostrils died. So, the LORD destroyed every living thing that was on the surface of the ground, including people, animals, creatures that creep along the ground, and birds of the sky. They were wiped off the earth. Only Noah and those who were with him in the ark survived. The waters prevailed over the earth for one hundred and fifty days.

Overwhelmed the earth: The waters did not merely rise, they overwhelmed the entire earth.

Completely inundated the earth: Repetition emphasizes the depth of the waters.

More than twenty feet: Hebrew says fifteen cubits, or about 22.5-feet. Remember, the Ark displaced about 22-feet of water.

Birds of the sky: Notice that marine animals are not mentioned.

The waters prevailed: The floodwaters were stronger than the earth.

GENESIS 8:1-5

But God remembered Noah and all the wild animals and domestic animals that were with him in the ark. God caused a wind to blow over the earth and the waters receded. The fountains of the deep and the floodgates of heaven were closed, and the rain stopped falling from the sky. The waters kept receding steadily from the earth, so that they had gone down by the end of the hundred and fifty days. On the seventeenth day of the seventh month, the ark came to a rest on one of the mountains of Ararat. The waters kept on receding until the tenth month. On the first day of the tenth month, the tops of the mountains became visible.

But God remembered Noah: God's covenant with Noah brought provision and protection in the midst of severe judgement.

God caused a wind to blow over the earth: This act begins the recession of the floodwaters.

Fountains of the deep and the floodgates of heaven were closed, and the rain stopped falling from the sky: In concert with the wind, these actions stops the source of the floodwaters.

The mountains of Ararat: These were in the region of the Caucasus, also known as ancient Urartu where the elevation exceeded 17,000-feet. Also notice the Ark came to rest on one of the mountains, not specifically Mt. Ararat.

The tops of the mountains became visible: Starting with the wind that is mentioned in the beginning portion of these verses, the waters had begun to recede.

GENESIS 8:6-12

At the end of forty days, Noah opened the window he had made in the ark and sent out a raven; it kept flying back and forth until the waters had dried up on the earth. Then Noah sent out a dove to see if the waters had receded from the surface of the ground. The dove could not find a resting place for its feet because water still covered the surface of the entire earth, and so it returned to Noah in the ark. He stretched out his hand, and took the dove, and brought it back into the ark. He waited seven more days and then sent out the dove again from the ark. When the dove returned to him in the evening, there was a freshly plucked olive leaf in its beak! Noah knew that the waters had receded from the earth. He waited another seven days and sent out the dove again, but it did not return to him this time.

Sent out a raven: Ravens can survive on a broad range of food types whereas a dove is much more selective in its food choice.

Sent out a dove: The dove's choice of food would indicate new life had begun to grow; thus Noah and his family could also survive outside the Ark.

Sent out the dove again but it did not return to him this time: This indicates that new life had begun to grow and Noah and his family could also survive outside the Ark.

GENESIS 8:20-9:3

Noah built an altar to the Lord. He then took some of every kind of clean animal and clean bird and offered burn offerings on the altar. And the Lord smelled the soothing aroma and said to Himself, "I will never again curse the ground because of mankind, even though the inclination of their minds is evil from childhood on. I will never again destroy everything that lives, as I have just done. While the earth continues to exist, planting time, and harvest, cold and heat, summer and winter, and day and night will not cease." Then God blessed Noah and his sons and said to them, "Be fruitful and multiply and fill the earth. Every living creature of the earth and every bird of the sky will be terrified of you. Everything that creeps on the ground and all the fish of the sea are under your authority. You may eat any moving thing that lives. As I gave you the green plants, I now give you everything."

Offered burnt offerings on the altar: Noah expressed his gratitude and submission to God.

Inclination of their minds is evil from childhood on: The inclination of the heart of mankind.

While the earth continues to exist, planting time, and harvest, cold and heat, summer and winter, and day and night will not cease: With many alterations from the global Flood, God now reestablishes the cycle of seasons after the catastrophic interruption. This portion of Scripture is also a rebuttal to man-caused (anthropogenic) global warming/climate change that is alleged will destroy the earth as God is in control, not mankind.

Terrified of you: The animals will fear humans from this time forward. This must not have been the case prior to the Flood.

As I gave you the green plants, I now give you everything: As mankind and animals were vegetarians before the Flood (Genesis 1:29-30, 3:18), this edict is now rescinded.

NOAH'S ARK

In the Genesis Flood account, God tells Noah that because of the rampant “*wickedness of mankind*” that He will wipe mankind and creatures that move on the earth and the birds of the air from the face of the earth by using a global Flood. God then gives Noah the dimensions and several brief details of an Ark that Noah is to build to save Noah and his family along with two of every kind of animal that God will bring to the Ark. Along with God, Noah, and the global floodwaters, the Ark is also an integral part of the Flood account but is likely one of the least understood, particularly when secular science has stated that it was - and is - impossible to build a 450-foot boat from wood without the necessary expertise, craftsmen and overall strength. An example of *secular scientific criticism* follows:

“In the Bible, God tells us that the length of the ark shall be three hundred cubits long, the breadth of it fifty cubits, and the height of it thirty cubits. To even begin considering such a project, Noah would have had to possess an immaculate knowledge and education in the art of naval architecture, as well as in fields that would not arise for thousands of years, such as physics, calculus, mechanics, and structural analysis, not to mention ship building at that time (which was supposedly around six thousand years ago) did not surpass what would be thought of as dinghies when likened to the magnitude of the ark.

A man and his sons building a ship of this magnitude would be the most outstanding accomplishment ever if it were true; with no known ship building heritage, and no known craftspeople to help him, how could someone be expected to believe that just Noah and his

three sons, using Bronze Age tools, built a wooden ark of this colossal size, along with the scaffolding, docks, and the workshops necessary to build it?"²²

Not surprisingly, the previous quote is typical of secular disbelief that does not believe in a Creator God who created the universe, everything that we see (John 1:3), and also directed *all* of the elements and details of the construction of the Ark (thru Noah) with the events of the global Flood. Although secular science is directly opposed to the Bible as a reliable and accurate source of history and applicable science, it should not be a surprise that many facets of modern science validate the global Flood and the Ark. As we have previously discussed some of the Geological and Archaeological confirmations of a global Flood, there are many viable facets to the Ark, some of which are not understood and/or just quickly passed over. So, let's take a closer look at the details of the Ark and include some scientific justification for the reliability of the biblical account.

DETAILS OF THE ARK

Purpose

Initially, it is essential to realize that the Ark was not a boat. Webster's New World Dictionary defines boat as - "*a small open vehicle for traveling on water*" - and as we shall see, the Ark was nothing like a "*small open vehicle for traveling on water.*" The Hebrew word for Ark (*tebah*) is translated as "*box*" which defines the Ark as a box. The Ark had no propulsion system, no engine and no steering mechanism, but was a large floating box that was perfectly designed by God to stay afloat for one full year as a place of shelter and provision for the people and animals on board.

Directions

God's directions to Noah only consisted of the measurements, type of wood, the use of pitch inside and out, an 18-inch opening at the top, three interior decks, rooms, and a door in the side. Therefore, we do not know what the finished appearance (beyond God's directions to Noah) looked like. The "long box" appearance of the Ark is often used as any other designs are speculation.

Proportion

In some accounts, the length varies between 450-feet to 500-feet. If Noah used the common measurement of a cubit equals 18-inches from antiquity, the Ark would have been about 450-feet long, 75-feet wide and 45-feet high. For comparative purposes, an NFL football field is 360-feet long, so the Ark would have been about 33% longer and displaced about 22-feet of water, or, 50% of the Ark was above water. Interestingly, the Ark proportions have been tested and compared to twelve other hull proportions at the Korean Research Center in Kiso, Korea, which is a world-class ship research center. Twelve different designs were tested

and none could significantly outperform the biblical specifications (regarding capsizes resistance, sea-kindliness, and hull stress). The tests also concluded that the Ark could handle waves well over 150-feet and could be tilted to almost 90-degrees and still right itself. Not surprisingly, large modern ocean-going vessels like oil tankers are still built to the same biblical 6 to 1 ratio.²³

Construction

The Ark had 120 years *available* for construction (Genesis 6:3) and the time for construction is unknown. It has been claimed that an Ark made of wood and 450-feet to 500-feet long would exceed the maximum possible length for a boat made of wood as the long hull would flex in the waves causing the planks to slide against each other and break the waterproofing seal and potentially the wooden structure of the Ark. However, discoveries from ancient and recent shipbuilders have shed light on these reservations as follows:²⁴

- The ancient Hellenistic Greeks built a wooden catamaran galley, the *Tessarakonteres*, that was 420-feet long (almost Ark-sized) in 210 B.C. and powered by 4,000 rowers. Somewhat smaller, the wooden Greek *Syracusia* was 360-feet long
- In the United States, the 6-masted wooden schooner *Wyoming* was 450-feet long (tip to tip), was built in 1909 and used to carry coal. In addition, the wooden railroad ferry *Solano* was 425-feet long and built in 1878

When constructing large wooden ships, there was a potential problem of long planks providing sufficient strength and also eliminating the dilemma of planks sliding against each other. A method to resolve this dilemma was solved by the use of cross-lamination and edge-jointed planking using mortise, tenons, and dowels. This practice was used at least as far back as 1,400 yrs. B.C. and likely before that. Cross lamination is comprised of three layers consisting of the inner layer running horizontal, the next layer running at about a 45-degree angle, and the outer layer running horizontal.²⁵ Therefore, the method to satisfactorily construct a large seaworthy vessel of wood likely existed in Noah's day.

Capacity

The Ark had a superior cargo carrying capacity as compared to modern ships as the sides were not sloped, there was no ballast necessary to keep the Ark upright, and there was no space used by machinery to power, heat, and cool the Ark. The Ark contained 1.4 million cubic feet of interior space, or the equivalent of 522 railroad stock cars. One railroad stock car can carry 240 medium sized animals. As it is estimated there were about 17,000 species of animals prior to the Flood, it would have taken 146 stock cars to hold about 34,000 medium sized animals. Therefore, 60% of the Ark was unused for animals.²⁶

Miscellaneous

Several other items of note that have undergone scientific scrutiny are ventilation, lighting, water, and food. Let's take a quick look at each of these items:²⁷

- **Ventilation/light:** As heat naturally rises (remember the 18-inch opening at the top of the Ark?), wave motion can pump air throughout a vessel, and so on. Light could be easily provided by the opening at the top of the Ark and oil lamps
- **Water:** Water could be piped from rainwater tanks on the roof of the Ark to upturned airtight containers that feed into a drinking trough. This would keep water available for weeks at a time before the containers would need refilling
- **Food:** Initially, consider that life and conditions on the Ark were different from the perspective there was no reproduction of the animals during their time on the Ark. So, whether it was a form of hibernation or some other consideration, no one knows, but we do know that God commanded Noah to *"take for yourself every kind of food that is eaten, and gather it together. It will be food for you and for them."* Remember, until the end of the Flood, man and animals were vegetarians. For an additional look at this, see Genesis 1:29-30, and Genesis 9:3. Although meat is not specifically mentioned in Genesis 1:29-30, the vegetarian viewpoint is generally accepted. Grains, hay, and other similar types of food can be easily stored and concentrated amounts would not require constant attention and/or refrigeration
- **Most importantly:** Genesis 8:1 states - *"Then God remembered Noah, and every living thing, and all the animals that were with him in the Ark."* God's covenant with Noah brought provision and protection in the midst of a severe judgement

Working Replica

Interestingly, a working replica has been constructed by Creationist Johan Huibers in Schagen, Netherlands. Johan built the ark of cedar and pine and did most of the work with his own hands, using modern tools and with occasional help. Construction began in May 2005. The project took about *four* years! The ark is now open to the public.²⁸

Discovery

Finally, let's briefly look at the prospect of Noah's Ark being found in modern times. First, it is important to consider Genesis 8:4 that states - *"the Ark rested on the mountains of Ararat,"* not specifically on Mt. Ararat. Interestingly, there are accounts of people searching for the Ark (primarily on Mt. Ararat) that date back to Eusebius of Caesarea (275-339 AD) and continue up to the present where Archaeologists have claimed to have found the Ark in 2021 using 3D

technology.²⁹ Currently, there has been a complete lack of *factual proof* that the Ark has ever been found.

FLOODWATERS

Now, let's focus on a central question that is frequently asked about the global Flood:

“Where did all of the water that was required to totally engulf the earth come from?”

To get a better understanding of this question, let's begin by looking at the *Source* of the floodwaters required to totally engulf the earth, and then in the following section, we will look at the *Flood Geologic Mechanism*.

SOURCE OF THE FLOODWATERS

Let's go back to the first chapter of Genesis and carefully look at the creation account to understand the original composition of the earth with some recent scientific discoveries. The beginning chapter of Genesis states:

“Now the earth was without shape and empty; and darkness was over the face of the watery deep, but the Spirit of God was moving over the surface of the waters”

Genesis 1:2

This verse states the entire earth was originally an unbounded mass of water and the watery deep means an abyss like deep that surrounds and underlies the earth.³⁰ Without shape and empty also means not finished in its shape and as yet uninhabited by creatures (Is. 45:18,19; Jer. 4:23, Jon. 2:5). Then, Genesis states:

God said, “Let the waters under the sky be gathered to one place and let dry ground appear.” It was so

Genesis 1:9

From the previous two verses, we know that the earth was originally *all* water before God caused the dry ground to appear, although the amount of dry ground is not mentioned. Today, we know that the earth is *covered* by 71% water (averaging about 2 miles deep) and 29% dry land.³¹ Currently, science is still investigating the precise makeup of the inner portions of the earth (Figure 11) which is believed to consist of:³²

- Crust (*lithosphere*) – 5-25 miles thick
- Mantle (*asthenosphere*) – 1,800 miles thick
- Outer Core – 1,400 miles thick
- Inner Core – 800 miles thick

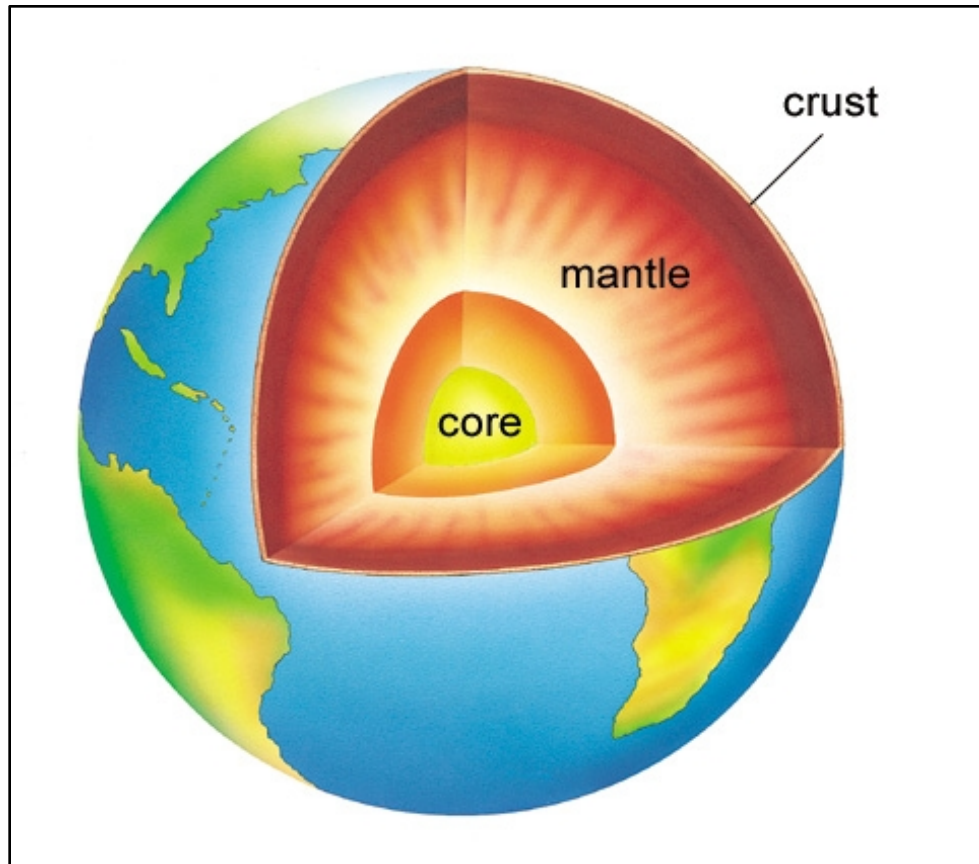


Figure 11. Crust, Mantle, Core

Although the oceans comprise 71% of the top surface (crust) of the earth, recent advancements in science indicate there is viable scientific evidence that there is a large *mega-source* of water below the crust of the earth that could have supplemented the waters already covering the earth from Day Three of the creation week as described in Genesis 1:9. The following is a summary of a more thorough explanation from the excellent paper *"From Where Did The Earth's Water Come From,"* and authored by geologist Dr. Andrew A. Snelling).³³ Quoting from New Scientist, magazine:

*"Earth's huge storage of water might have originated via chemical reactions in the mantle. That's the upshot of a computer simulation of reactions in earth's upper mantle between liquid hydrogen and quartz, the most common and stable form of silica in this part of the planet. The simple reaction takes place at about 1,400-degrees C. and pressures 20,000 times higher than atmospheric pressure as silica, or silicon dioxide, reacts with liquid hydrogen to form liquid water and silicon hydride"*³⁴

Fascinatingly, numerous studies by secular universities and scientific institutions such as University College, Ireland, University of Tokyo, Japan, University of Saskatchewan, Canada, University of Glasgow, United Kingdom,

Northwestern University, Illinois, and the British Geological Survey have all found evidence that the process mentioned in the aforementioned quote from New Scientist magazine *could* be a contributor to the origin of water during earth's early formation and is also possible that water is still being made this way deep inside the earth today. These scientific studies highlight how the minerals that comprise the earth's mantle are capable of incorporating large amounts of water and earth is likely wet in some sense all the way down to its core. According to team member Steve Jacobsen of Northwestern University, Illinois, *"the big take-home message is that the water cycle on earth is bigger than we ever thought, extending into the deep mantle."*³⁵

These published scientific studies culminate a long history of analyses of mantle rocks and minerals brought to the earth's surface by volcanism coupled with studies of deep earthquakes. The collective conclusion is that there are vast amounts of water stored in the earth's mantle within its minerals. Not only does that water assist in mantle convection, plate movements, and volcanism, but that water can also be released onto earth's surface via volcanic activity. In fact, more than 250 miles inside the earth there may be enough water to replace the surface oceans *more than ten times*.^{36,37}

In summary, waters available from inside the earth, combined with the waters in the original created oceans could have easily produced the amount of water necessary for the Genesis global Flood. If the recent scientific findings are correct, this means that the floodwaters did not have to be primarily produced by the ocean waters but the ocean waters could have been assisted by waters within the mantle that was created by God and already in place *"in the beginning."* The Bible's description of the *"breaking up of the deep"* is merely confirmed by the latest findings of secular science.

FLOOD GEOLOGIC DYNAMICS

Even though we previously discussed the amount of water in the oceans and the recent scientific discovery of earth's huge storage of water via chemical reactions in the mantle, it is also important to better understand the *"dynamics"* of the global floodwaters and the mechanism that caused the flooding of all land topography and the ability to *"cover all of the high hills (mountains) under the whole heaven (Genesis 7:19)."* Although the Genesis account is succinct and direct in its orderly description for the basics of the global Flood, specific explanatory details are not mentioned. So, let's unpack the geological dynamics for the global Flood from a biblical and scientific perspective, starting with the biblical account.

Note: A large portion of the following discussion has been taken from an excellent comprehensive publication titled “Carved In Stone – Geological Evidence of the Worldwide Flood,” by Dr. Timothy Clarey, Geologist, and published by the Institute For Creation Research, Dallas, Texas. This publication is new and unique as it is based on the biblical account of the Flood, analysis of rock columns across multiple continents, input from the American Association of Petroleum Geologists, input from the oil and gas industries, stratigraphic columns at hundreds of locations across the U.S., oil well logs and government reports to name some of the sources. Although additional research is necessary, this book gives a viable overall account of the geologic aspects of the Flood.

(11) “In the six hundredth year of Noah’s life, in the second month, on the seventeenth day of the month – on that day all the fountains of the great deep burst open and the floodgates of the heavens were opened. (12) And the rain fell on the earth forty days and forty nights. (17) The flood engulfed the earth for forty days. As the waters increased, they lifted the ark and raised it above the earth. (18) The waters completely overwhelmed the earth, and the ark floated on the surface of the waters. (19) The waters completely inundated the earth so that even all the high mountains under the entire sky were covered”

Genesis 7:11,12,17,18,19

As a starting point with this biblical portion of the global Flood account, there are three common perspectives that arise from a quick read and/or a passing opinion that we should briefly discuss. They are:

“Was the geology of the pre-Flood earth similar to the post-Flood geology of earth”

Although the Bible tells us that the pre-Flood earth was destroyed by water - “By which the world that then existed perished, being flooded with water, 2 Peter 3:5-6,” - it does give a few basic details such as everything was very good before the fall (Genesis 1:31), mankind and animals were vegetarians (Genesis 1:29-31), four rivers flowed out of Eden (Genesis 2:10), precious metals like gold and onyx stone were readily available (Genesis 2:12), and there was no rain but the earth was watered by a very heavy mist or vapor (Genesis 2:5-6). However, geological data from actual rock layers, sediment layers and the fossil records from North America, South America, Africa, and the Middle East has indicated that unlike today, the relative topography of the pre-Flood earth can be arranged into three broad environments *without* the high mountains that are present today:³⁸

- Shallow Seas
- Lowland Areas
- Upland Areas

Although there is an “*age of the earth*” debate between secular geologists and creationists, it is mutually agreed that originally there was one large continental land mass (supercontinent). Biblical creationists place the single land mass as a pre-Flood continental configuration called Pangaea (secular science prefers the term Rodinia) which seems to validate the third day of the creation account in Genesis 1:9 where “*seas*” are plural and “*dry land*” is singular. The importance of one supercontinent will be explained under Continental Drift on page 33.

“How could 40-days of rain flood the entire earth”

Some people equate the 40 days and nights of rain to be the primary focus of the water for the Flood. However, verse eleven states “*all the fountains of the great deep burst open*” first, and then the “*floodgates of the heavens were opened*” next. Genesis 7:12 states that the rain was on the earth for 40 days and 40 nights and Genesis 7:24 states that the waters prevailed on the earth 150 days. This indicates that for the first 40 days, the rising floodwaters were from a combination of the rain and the fountains of the deep with only the fountains of the deep providing the rising floodwaters for an additional 110 days after the first 40 days.³⁹ Therefore, the fountains of the deep were the primary source for the global Flood waters.

“Was there enough water to cover all the high mountains.”

Was there enough water to cover the high mountains (such as Mt. Everest and the Himalayan Mountains) is a great question as Mt. Everest is the highest mountain in the world at 29,029-feet high with some other mountains not far behind. Even though there is currently enough water in the oceans and lakes to cover the earth to a depth of about 10,000-feet, this does not answer the question of why we find fossils of sea creatures in rock layers that cover *all* the high mountains on earth.⁴⁰ The key to this question is to remember that the global Flood did not have to cover the *present* earth and related mountains but did have to cover the *pre-Flood* topography which was different from modern topography. 2 Peter 3:5-6 indicates that the pre-Flood earth was not only destroyed by water, but would have been altered from what we are familiar with today.

Now, let's continue by focusing on the initial significance and geologic impact of “*the fountains of the great deep bursting open*” as stated in Genesis 7:11.

Fountains Of The Great Deep Bursting Open

The great deep bursting open is the starting point and foundation to the beginning of the global floodwaters inundating the earth. To get a better understanding of the geologic dynamics that were responsible for the great deep bursting open, we need to define two primary geologic mechanisms that are known as plate tectonics and catastrophic plate tectonics.

plate tectonics

The word “*tectonics*” has to do with the processes that control the structure and properties of the earth’s crust and their movements over time. As the earth’s crust is a mosaic of rigid blocks called “*plates*,” the interactions and movements among these plates is called “*plate tectonics*.” The concept of plate tectonics was formulated in the 1960’s and is universally supported by modern geology as it provides a uniform context for understanding mountain-building processes, volcanoes, and earthquakes as well as the reconstructing of past continents and oceans.⁴¹ This view holds that the earth has a rigid outer layer (crust) that overlies the uppermost portion of a plastic partially molten layer called the mantle. The crust and uppermost portion of the mantle are fused together and behave as a single unit. Together, the crust and uppermost portion of the mantle are called the lithosphere (Figure 12).

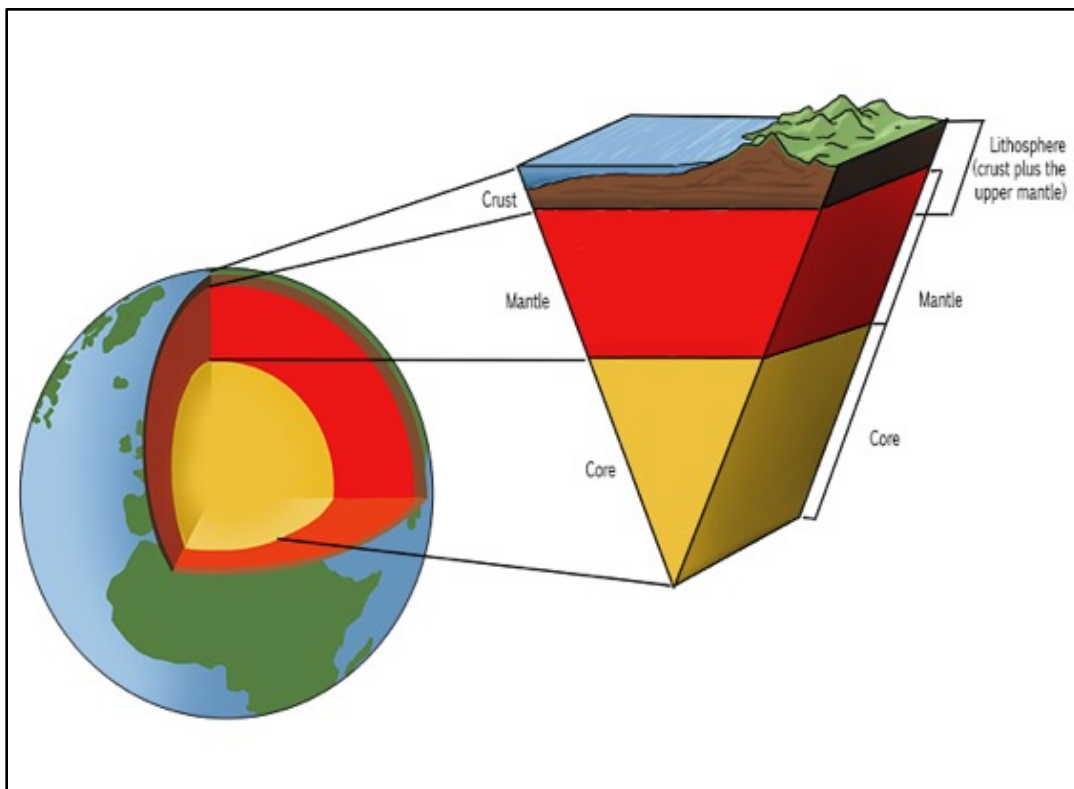


Figure 12. Lithosphere – Crust and Upper Mantle

The lithosphere is comprised of about seven large continental-sized plates (North American, Pacific, Eurasian, African, Indo-Australian, South American and Antarctic), seven medium-sized regional plates and several small ones.⁴² These plates interact along their boundaries at typical rates of .5 to 6-inches per year from satellite GPS measurements. Below the lithosphere is the asthenosphere, a viscous mantle layer kept malleable by the heat deep within the

earth as it lubricates the underside of earth's tectonic plates allowing the lithosphere to move around. It is believed that the driving force behind plate tectonics is convection in the mantle. Hot material near the earth's core rises, and colder mantle rock sinks causing the plates above this roiling mantle to repeatedly collide, stick together, then rip apart. Places where plates meet and collide and divide are called plate boundaries. As illustrated in Figure 13, plates can *converge* by one plate sliding under another plate, *diverge* by spreading apart, or *transform* by slipping past one another.⁴³ Two examples of the destructive force

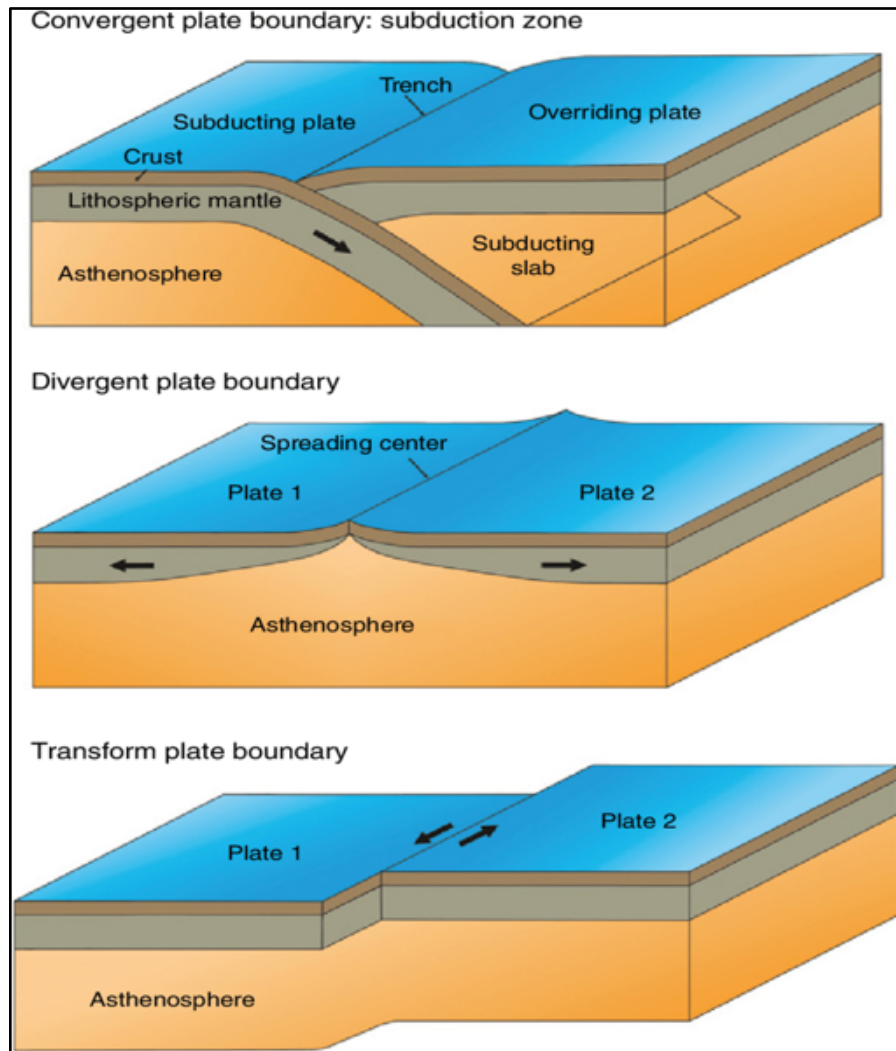


Figure 13. Plate Boundaries

and power of a subducting convergent plate boundary are the Valdivia and Okhotsk Sea earthquakes. In 1960, the Valdivia earthquake in southern Chile was measured at 9.5, lasted 10 minutes, and is the *largest* earthquake ever *recorded*. The earthquake was caused by the Nazca plate descending 49-feet underneath the South American plate, leaving 2 million homeless, injuring 3,000 people,

killing 1,655 people, starting a massive 82-foot tsunami on the Chilean coast that traveled across the Pacific Ocean and damaged New Zealand, Japan, the Philippines, Hawaii and the Aleutian Islands. The earthquake also triggered an eruption to Chile's Cordon Caulle volcano after forty years of inactivity.⁴⁴

In 2013, an 8.3 earthquake struck below the Sea of Okhotsk south of the Russian Kamchatka Peninsula and lasted for about 5 minutes. The earthquake has been called the largest *deep* earthquake (378 miles below the surface) ever *recorded*, but is also significant as the velocity of the transmitted rupture energy away from the epicenter was nearly 10,000 miles per hour!⁴⁵ Although the Valdivia and Sea of Okhotsk earthquakes are noteworthy from their size and depth, each earthquake literally pales in comparison to the earthquake activity during the global Flood.

catastrophic plate tectonics

With the previous summary of plate tectonics, let's turn our focus to catastrophic plate tectonics and how it provided the geologic dynamics (or the working mechanism) and energy for the global Flood. As a starting point, it is important to set the tone for this discussion by defining three key words; *catastrophic*, *burst* and *destroyed*. Merriam-Webster Dictionary defines catastrophic as - "*terrible disaster, a momentous tragic event, ruin, violent and sudden change in a feature of the earth*" - which bears a strong resemblance to the word burst in Genesis 7:11. Burst is defined by Webster's Dictionary as - "*to come apart suddenly and violently, explode.*" The same word burst is used in Numbers 16:30-33 to describe the supernatural opening of a great chasm into which the rebellious Korah, his families and followers were swallowed up, ending their rebellion against Moses. 2 Peter 3:5-6 states - "*the world that existed at that time was destroyed when it was deluged with water.*" Dictionary.com defines destroyed as - "*to reduce to useless fragments, demolish, annihilate.*"

In summary, the importance of the definitions of *catastrophic*, *burst* and *destroyed* underscores the extreme impact of catastrophic plate tectonics and the global floodwaters on the earth rather than a steady rising of floodwaters that eventually flooded the earth. The global Flood was not only responsible for the destruction of the pre-Flood earth topography, but as we will see, the formation of modern mountains and the current geography of the earth's present continents.

Now, let's continue our discussion by considering how catastrophic plate tectonics provided the *mechanism* for the dynamics of the global floodwaters (refer to Figure 14).

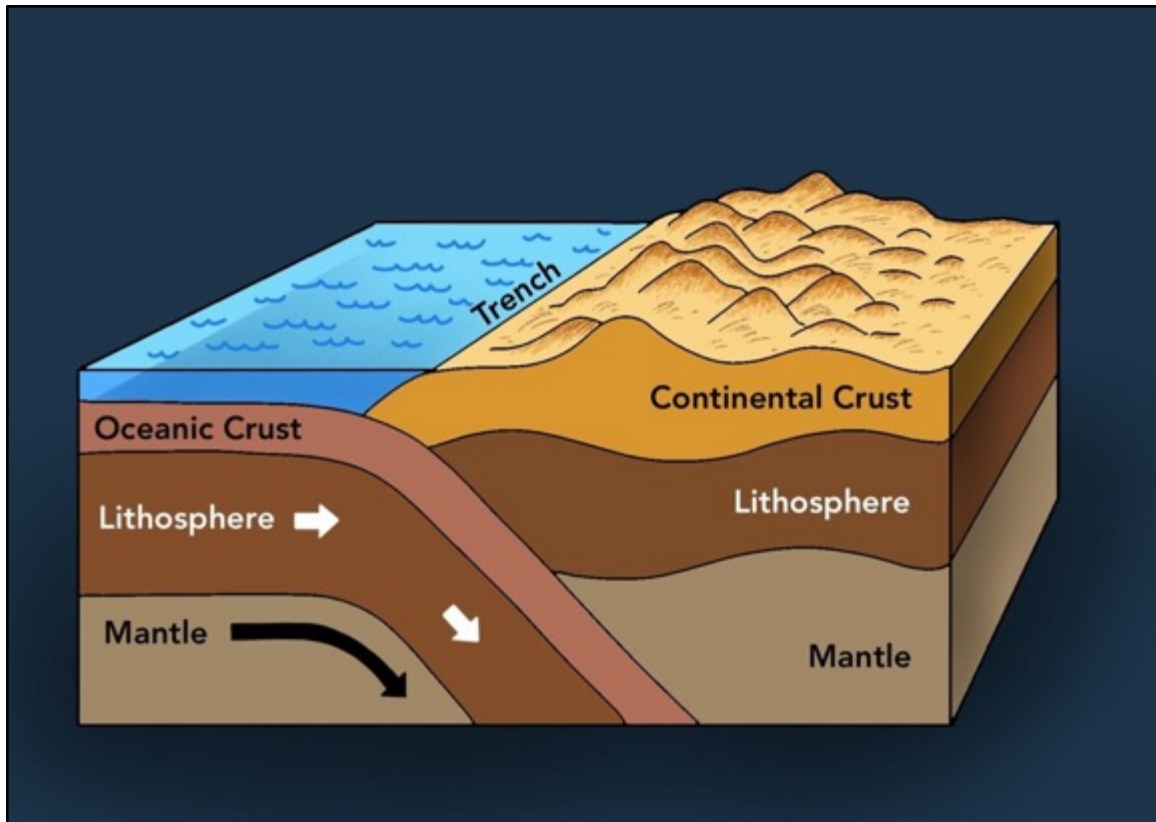


Figure 14. Runaway Subduction

Geologically, we begin with the pre-Flood earth as a *single supercontinent* (Pangaea)⁴⁶ that was differentiated into a core, mantle, and a crust. The crust was horizontally differentiated into a cold oceanic crust that was denser (heavier) than a lighter continental crust and the warm/hot mantle rocks underneath. The Flood mechanism begins with the oceanic crust developing a crack (trench) adjacent to the continental crust along thousands of miles of pre-Flood continental margins, causing the denser oceanic crustal plates to slide under the less-dense continental crust.⁴⁷ This process is called subduction and was “orchestrated” by God to begin the global Flood as evidenced by the following three reasons:

- God holds all things together (Heb. 1:3, Col. 1:17)
- God tells Noah that He will destroy the earth by a Flood (Genesis 6:13, 7:17)
- The Flood could not begin until God shut the door to the Ark, enclosing all flesh with the breath of life (Genesis 7:15-16)

As the subducting oceanic crustal plates travel downwards through the mantle, they not only pull the rest of the oceanic crustal plates with them but heat begins to develop from the resultant friction between the oceanic crustal plates and the surrounding mantle materials. This effect also reduces the

viscosity of the adjacent mantle materials and allows the subducting oceanic plates to continue to sink more quickly as they are denser than the surrounding mantle materials in addition to traveling downwards. However, if the frictional heat is not transmitted away at a sufficient rate (presumed), the viscosity of the surrounding mantle materials continues to decrease enabling the oceanic crustal plates to descend at an increasing rate of speed. This resulted in a progression called *runaway subduction* which is believed to have traveled at speeds of feet-per-second (creationist belief) rather than inches-per-year (secular belief). This scenario would have entirely replaced all of the pre-Flood oceanic crust with new and *rising* less-dense (lighter) hot magma from the mantle that cooled to form a completely new oceanic seafloor crust.^{48,49}

The previous summary of runaway subduction where all of the earth's pre-Flood oceanic crust is rapidly recycled into the mantle via a runaway process is now known to be enhanced by mantle materials that can deform and weaken dramatically (by factors of a billion or more) at mantle temperatures and stress conditions that can exist in mantles of planets the size of earth. The runaway subduction of the oceanic crust into the mantle enabled by this stress-weakening behavior of the mantle is now known as *catastrophic plate tectonics*⁵⁰ and has been scientifically verified by the following reasons:

Seismic Tomography: During the past twenty years, science has developed the technology of Seismic Tomography and has been used by geoscientists to see if crustal material exists at the base of the mantle. This technology has discovered that indeed, portions of the "*cold oceanic crust*" (62 miles thick and in a belt that corresponds to the perimeter of the Pacific Ocean⁵¹) had sunk the full 1,800 miles from the crust to the base of the mantle where temperatures are 7,232-degrees F.⁵² This suggests that the continents moved rapidly during the global Flood and that the global Flood occurred only thousands of years ago as opposed to the old earth perspective that would have resulted in the crust taking millions of years to sink towards the mantle. In this case, the slow sinking portions of oceanic crust would have liquefied before reaching the mantle.⁵³ Not surprisingly, Seismic Tomography images showing cold sub-ducted oceanic plates deep in the mantle demonstrates evidence that the global Flood events happened in the timeframe of the biblical account of the global Flood.

Evidence of Runaway Subduction: Runaway subduction and high-speed rock movement would create enough heat to create frictional melting between sliding rock surfaces and is called *pseudotachylyte* (PST). This condition can be found and documented in many locations around the world and is indicative of global catastrophic tectonic activity in earth's present – and past. One of the evidences of runaway subduction can be found at Pasagshak Point on the southeastern

edge of Kodiak Island where layers in the thrust zone melted and then cooled to form an overall resemblance to coal.⁵⁴

Magnetic Reversals: Molten lava (magma) contains minerals that tend to align with the North-South direction of the earth's magnetic field and is locked into the magma when it cools as basaltic rock. The basaltic rocks on either side of mid-oceanic ridges show a striped pattern of alternating bands of magnetization that reverse direction when moving away from the ridge. This striped pattern indicates that earth's magnetic field has flipped (north and south poles trading places) dozens of times that has resulted from a new seafloor rapidly forming during the global Flood which implies that the magnetic reversals must have also occurred rapidly.^{55,56}

Of particular note, there were three other noteworthy considerations that also happened during the runaway subduction progression as follows:

Seafloor Fracturing: The rapidly sinking oceanic seafloor crust forcibly displaced the softer hot mantle materials causing them to swell up elsewhere and form a new oceanic floor by solidifying upon contact with cold seawater. This conversion from a semi-liquid state to a solid state via cold sea water would have vaporized immense volumes of cold ocean seawater sending vertical supersonic

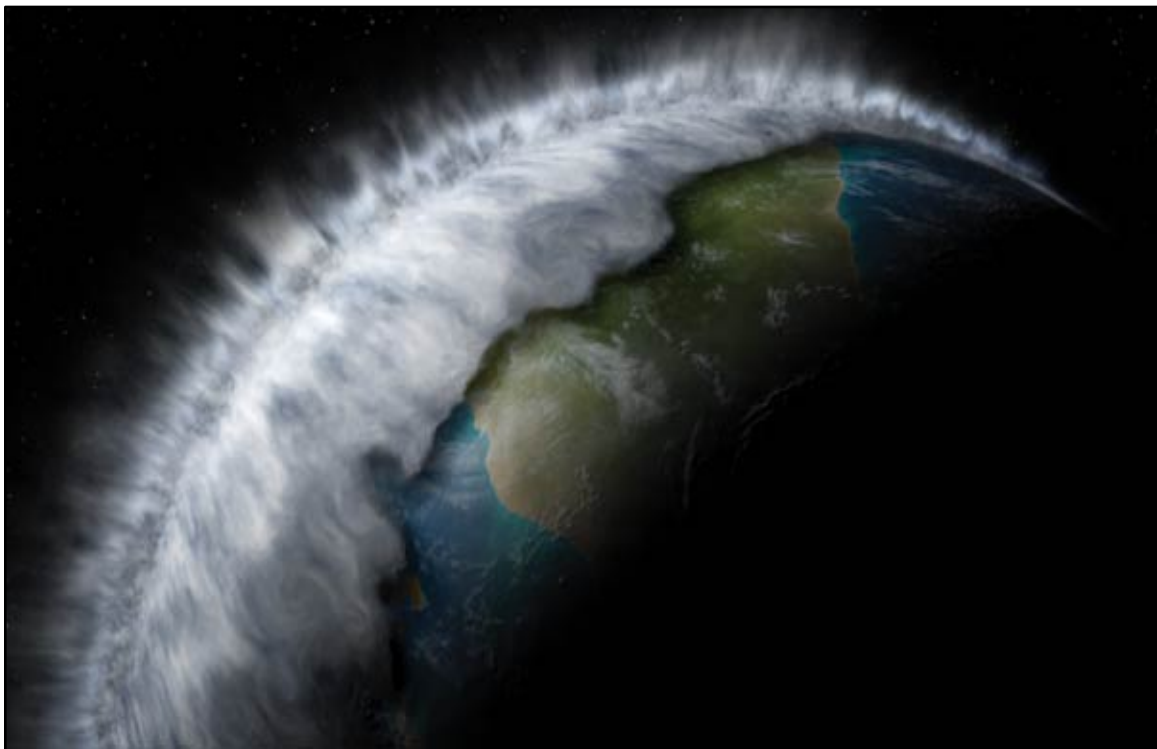


Figure 15. Upward Ejection of Subterranean Waters

steam jets along the entire 43,000 miles of the seafloor rift zones stretching around the earth as illustrated in Figure 15 (fountains of the great deep of Genesis 7:11 and 8:2??).^{57,58} These steam jets would have captured large amounts of seawater, catapulting the seawater high above the earth to then fall back to earth as intense global rain (floodgates of heaven were opened of Genesis 7:11-12??).

Continental Drift: At the same time that the pre-Flood oceanic crust was being catastrophically subducted into the mantle, the resultant torsional stress fragmented the pre-Flood supercontinent that ultimately resulted in multiple continents (North-South America, Africa, Eurasia, etc.) as illustrated in Figure 16.^{59,60} Although the idea of continental drift was first suggested by creationist

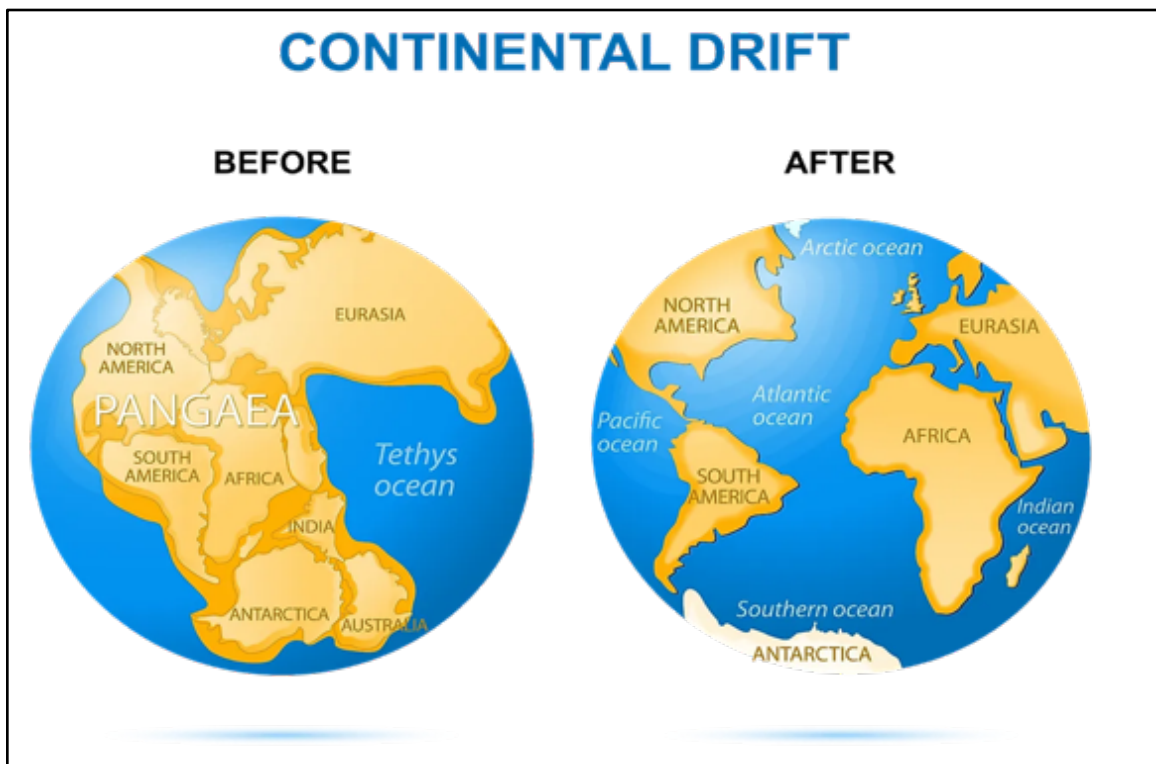


Figure 16. Continental Drift

Antonio Snider in 1859, it was not until 1915 that it began to be acknowledged by the secular scientific community and is the current ruling perspective because:

- Careful laboratory measurements of over 40 years have demonstrated how mantle rock can readily deform under stress
- Jigsaw puzzle fit of the continents
- Correlation of fossils and fossil-bearing strata across the ocean basins
- Continuation of matching coal beds of North America and Europe
- Various fossil species found in similar sediments that match up when the continents are reconstructed

The primary difference between the creationist and secular scientific perspectives is the speed of the drift as secular science would be slow over millions of years and the biblical Flood account would be much faster over a short time-period.

Mountain Formation: The fracturing of the earth's crust during the Flood was responsible for the continental landmasses moving and colliding to form our present high mountains.⁶¹ As an example, the Himalayan Mountain range was formed by the collision of the Indo-Australian plate and the Eurasian plate which supports the premise that most of our high mountains are the result of convergent boundaries where oceanic crust and continental crust collides (Figure 14).⁶² This was also responsible for ocean-bottom sediments and related fossils being lifted into high elevations.⁶³ When two continents collided, mountain belts were uplifted as the earth's crust buckled and warped as most high mountain ranges are coastal. The interpretation of the geological record illustrates that pre-Flood mountains were not as high as today and potentially were in the range of around 5,000 feet high.

FLOODING THE CONTINENTS

To summarize the preceding discussion on plate tectonics, the motion and resulting subduction of the oceanic crustal plates caused by catastrophic plate tectonics provided the two most powerful upwellings of water to flood the pre-Flood continents as follows:

- Because the newly created oceanic global crust was less dense, hot, and more buoyant than the cold oceanic crust it replaced, its formation would have caused it to rise, raising the new seafloor and *progressively* displacing ocean water upwards and forcing it onto land. It has been calculated that the elevated seafloor could have raised the sea level by as much as one mile, serving to flood the continental landmass⁶⁴
- Recent numerical modeling has also indicated that runaway subduction would have created countless tsunami-like waves across the land topography and resulted in an additional accumulation of over one-half a mile of water⁶⁵

Now, let's look at how the global floodwaters were progressively forced up to *completely cover all the continental land surfaces* while carrying vast quantities of sediments and marine organisms that were responsible for forming fossiliferous sedimentary rock layers (containing fossils) that cover large areas of the modern continents. An essential geologic term that will be used to define the six stages of the global Flood inundation of the pre-Flood topography is *megasequence* which will be defined as – *a sedimentary rock layer that is typically comprised of a bottom layer of sandstone, followed by a layer of shale, and a layer of limestone on top, representing one depositional interval that can be followed on common erosional*

*boundaries across the continents.*⁶⁶ Many creationist scientists believe that megasequences record the sedimentology of the Flood, while fossils record what flora and fauna were buried within each megasequence. The six megasequences we will consider along with the impact to human life are the Saulk, Tippecanoe, Kaskaskia, Absaroka, Zuni and the Tejas.⁶⁷ As a point of interest, these geologic terminologies are used in both secular and creationist science, the difference is millions of years (secular) and progressive depositional intervals within the biblical 150 days as stated in Genesis 7:24 (creationist). Let's start with the conditions prior to the Saulk Megasequence (Pre-Saulk) that were instrumental to the onset of the Flood.

PRE-SAULK

On Day 1 of the beginning of the global Flood, Genesis 7:11 states that the *"fountains of the great deep were broken up and the windows of heaven were opened."* As previously discussed, this geologic breakup would have initiated the beginning of a massive separation of the oceanic seafloor, tectonic plate movements, magma rising upwards into cold seawater, an upward surge in steam and water, and volcanic activity.^{68,69}

Conditions

Humans (not on the Ark) would notice much volcanic activity, earthquakes much larger than modern earthquakes, and the beginning of an intense deluge of rain. Other than feeling and observing these new disasters, most people would have been able to continue on with notable apprehension.

SAULK MEGASEQUENCE

During the Saulk megasequence, the continental topography was about the same configuration as the pre-Saulk period and any plate motion/subduction that had started had not yet substantially moved the continents. However, there was a simultaneous and significant rise in the sea level that begins to encroach across the continental topography as this megasequence starts the beginning of the flooding. At this period of time, it is likely that runaway subduction had only started in some locations at first with more widespread subductions occurring later in the Flood.⁷⁰

Conditions

Humans on land would have observed continuous substantial earthquakes that were also responsible for tsunamis that affected the surrounding shallow sea areas while not yet impacting higher land areas. Additionally, the rain was still unceasingly severe along with notable volcanism discharging gases, water, and magma. Geologic calamities were becoming more frequent and robust by the day.

TIPPECANOE MEGASEQUENCE

Tectonic plate subduction was spreading around the earth while continuing to increase the spread and intensity of tsunamis onto the land. Although there were many similarities between the first two megasequences, the floodwaters were able to rise somewhat higher than the Saulk megasequence. The Saulk and Tippecanoe megasequences were likely within the first 40 days of the Flood event.⁷¹

Conditions

At this still early stage in the Flood, the tsunami waves from increasing tectonic plate subduction were now beginning to reach further up on land with each pulse of the wave action, although likely not quite reaching the location of most human settlements. Additionally, the relentless and torrential downpour of rain in addition to numerous enormous earthquakes were probably impressing the fact that Noah had been right after all in addition to an increasing concern for personal safety by the remaining humans.

KASKASKIA MEGASEQUENCE

The Kaskaskia megasequence likely began right after the Tippecanoe megasequence, was also within the first 40 days of the Flood, and rose slightly higher than the previous megasequences. At this point, the floodwaters did not cover an appreciable amount of land. The Saulk, Tippecanoe and Kaskaskia megasequences primarily represent the consequences of progressively inundating tsunami-like waves of floodwaters that also transported vast amounts of sediment across pre-Flood shallow seas and is identified by the sediments containing almost 100% marine fossils. This would indicate that the Saulk, Tippecanoe and Kaskaskia megasequences occurred during the first 40 days of the Flood and the fact that the Ark did not begin to float until Day 40 as stated in Genesis 7:17. As we will see, the next megasequence (Absaroka) is when the runaway subduction begins to operate on a larger scale and the land portions of the continental topography begin to be flooded.⁷²

Conditions

Similar to the previous megasequences, the continuation of intense rainfall, enormous earthquakes and repeated tsunami-like waves that were progressively reaching higher levels were likely beginning to prioritize the need for animals and humans to relocate to higher elevations. This perception would be in preparation for an obvious realization for the inevitable steady rising of floodwaters. At this point, the realization of not paying attention to the warnings of Noah were becoming clearer and more overwhelmingly dreadful.

ABSAROKA MEGASEQUENCE

This megasequence begins a critical stage in the Flood account when conditions went from increasingly bad to conditions that progressed from worse to

cataclysmic. After 40 days of intense rainfall and progressively rising tsunamis across the shallow sea areas on the edges of the continental landmasses, the floodwaters now begin to flood some of the land topography and begin to float the Ark (Genesis 7:17). This was a result of runaway subduction beginning to operate on a wider global scale resulting in additional new seafloor that elevated the ocean waters from below, creating a higher overall sea level. This allowed tsunami waves to begin racing across the continental landmasses, reaching higher elevations and burying the affected land in the process. Additionally, due to the increase in global runaway subduction, an all-new ocean floor began to be created in addition to the breakup of the supercontinent Pangaea, *beginning* the separation of Pangaea to form the modern continents. As subduction increased globally and created new seafloor, floodwaters were progressively pushed higher and higher dramatically increasing their destruction to land and life.⁷³

Conditions

Conditions outside the Ark were now starting to reach catastrophic proportions as the tsunami waves were now flooding large portions of the pre-Flood lowlands (where most humans lived) with debris, mud, sand, trees and miscellaneous building materials along with destroying and burying everything in its path. Each new day would have the progressing waves reaching higher and higher while destroying everything in its path, new volcanic activity and new earthquakes. Competition for higher ground and safety would not only have been commonplace, but extremely intense and fierce. At this point, it would have been obvious that the end of the world and life was drawing to a close.

ZUNI MEGASEQUENCE

During the Zuni megasequence, the floodwaters likely reached their maximum high point on Day 150. At this point, the continents were completely submerged, the highest land formations were covered by a depth of 22.5 to 30-feet (depending on the length of a cubit), and no land-dwelling creatures outside the Ark remained alive as detailed in Genesis as follows:

“And the waters prevailed exceedingly on the earth, and all the high hills under the whole heaven were covered. The waters prevailed fifteen cubits upward, and the mountains were covered. And all flesh died that moved on the earth: birds and cattle and beasts and every creeping thing that creeps on the earth, and every man. All in whose nostrils was the breath of the spirit of life, all that was on the dry land, died. And the waters prevailed on the earth one hundred and fifty days.

Genesis 7:19-22, 24

The supercontinent Pangaea continued to separate into multiple continents as the runaway subduction mentioned in the Absaroka megasequence continued

thru this megasequence with little geological relief. Not surprisingly, the Zuni megasequence exhibits the most sediment deposition by water as compared to any of the earlier megasequences which resulted in the most water volume, maximum land coverage and the most sedimentation/debris deposited on the continental landmasses. In summary, the runaway subduction process resulted in a massive amount of new seafloor being created which pushed the ocean water level high enough to completely flood/cover the continental landmasses. This also brought an end to all flesh on the earth (except marine creatures) that were not on the Ark.⁷⁴

Conditions

At the beginning of this megasequence, much of the land creatures (animals and humans) were likely still alive. However, at the end of this megasequence they had all perished. Between the beginning and end of this period, land animals that were left would be desperately trying to stay ahead of the advancing waters, and remaining humans would not only be trying to advance to any remaining higher ground but would do so with the knowledge that their time on earth was rapidly coming to a ruinous end. To add to this catastrophic period, gigantic earthquakes, immeasurable volcanic eruptions emitting vast quantities of ash and debris and the ever-present advancing tsunami-like waves of water choked with sediment, trees and dead creatures of all kinds would have rapidly been reducing the last vestiges of elevated dry land with no relief. Finally, as Day 150 approached, each successive wave of water would have washed away more life desperately clinging to any point of security until finally, all lasting life would have been washed away by the rising waves. At this point, water would have completely covered the earth and destroyed all land-dwelling life outside the Ark.

TEJAS MEGASEQUENCE

This megasequence can be termed the *"receding phase of the global Floodwaters"* which began after Day 150, as Genesis 8:3 states – *"at the end of the hundred and fifty days the waters decreased."* During this receding phase of the water recession off the continents, there was still a substantial amount of plate tectonic activity as new ocean crust was still being formed. Additionally, God caused a wind to pass over the earth and the fountains of the deep and windows of heaven were restrained (Genesis 8:1-5, 13). Although the Bible does not specifically state when these actions were started, we do know that the water began to recede on Day 150. An important assistance to the recession of water was the cooling, increased density and sinking of the newly created ocean seafloor crust. As this seafloor crust sank into the mantle, it would have created a deeper oceanic basin and also helped to pull the floodwaters off the continents and back into the newly formed ocean basins. As this megasequence ended, runaway subduction had

dramatically slowed and the continents of the then world had reached locations that reflect modern topography. As a result of subducting and thickening of the continental crust during the Zuni and Tejas megasequences causing massive uplifts of costal regions, 80% of modern global mountain ranges were likely developed in this megasequence (i.e., the Andes, the Rockies, the Alps, and the Himalayas).

Conditions

Towards the end of Day 150 of this megasequence, any humans that endured were located in-mase at the highest ground they could find in a final effort to escape the rising floodwaters. As the floodwater waves finally crested, any remaining humans and/or animals – anywhere on the continental landmass – would have been washed off in *high-velocity tsunami waves*, resulting in all life outside the Ark (except marine animals) finally being destroyed (Genesis 7:23) and spreading their remains in great distances and in all directions.

WHERE DID THE FLOOD WATERS GO?

Unlike the question of *“where did the all of the water for the global Flood come from,”* this question is more simplistic. The biblical account indicates that the recession of the floodwaters began after the high-water level on Day 150. Then, beginning in Genesis 8:1, God closed the fountains of the deep and restrained the windows of heaven in addition to making a wind to pass over the earth. At this point, Genesis indicates that the floodwaters – *“receded continually from the earth.”* Genesis 8:13 states – *“and it came to pass in the six hundred and first year, in the first month, the first day of the month, that the waters were dried up from the earth.”* Depending on the length of the calendar year that was used at that time, this would have been about 314 days after the Flood began. This indicates that the floodwaters had completely dried up on the entire landmass of earth.

From our previous discussion on the replacement of the older dense ocean crust that subducted downwards through the mantle, remember that the newly formed ocean crust would have initially been lighter causing it to rise and push the ocean waters upwards and onto the continental landmasses. However, as this crust cools from contact with cold ocean seawater, it not only becomes more dense, but also heavier and causing it to sink deeper into the mantle pulling the water depth of the ocean with it. As a result, this process would not only have drawn the floodwaters off the continents but would have also created a basin for the retreating floodwaters. So, the floodwaters retreated to the newly formed ocean basins.⁷⁸ Interestingly, there are four verses in Psalm 104 that may apply to the global floodwaters retreating to the oceanic basins as follows:

“(6) The watery deep (the same phrase as found in Genesis 1:2) covered it like a garment; the waters reached above the mountains. (7) Your shout made the waters retreat; at the sound of your thunderous voice they hurried off – (8) as the mountains rose up, and the valleys went down – to the place you appointed for them. (9) You set up a boundary for them that they could not cross so that they would not cover the earth again”
Psalm 104:6-9

Although there is some debate about this verse referring to pre-Flood, post-Flood – or both, the general consensus is it refers to the post-Flood time scale. From the post-Flood perspective, this verse indicates the mountains were uplifted (evidence of “*uplifting*” can be seen in the mountains around the world), portions of the earth sank downwards, and the floodwaters returned to the newly formed oceanic basins where they reside today.^{79,80}

CONCLUSION

Unfortunately, many people either reject Genesis outright or find Genesis hard to believe (including the creation/evolution debate) without using secular scientific dogma to redefine and or refute portions of Scripture even though they claim to believe in the authority and inerrancy of the Bible. Although discussion and debate are often helpful and can be enlightening, the real issue of the biblical/secular scientific debate is not trying to prove the validity of biblical accuracy by disproving secular science, it is a person’s **TRUST** in Scripture, and particularly the Genesis account of creation and the global Flood. At this point it should be stated that Genesis is pivotal in Scripture from the following perspective – *If Genesis is not true and complete as written, are there other portions of Scripture that are also not true, incomplete as written, or need to be redefined – such as the resurrection?* Obviously, either the Bible is true from the first verse in Genesis to the last verse in Revelation, or it is not!

The dilemma of belief in biblical Scripture without extraneous modification by some people is outlined in Romans as follows:

(18) “For the wrath of God is revealed from heaven against all ungodliness and unrighteousness of people who suppress the truth by their unrighteousness, (19) because what can be known about God is plain to them, because God has made it plain to them. (20) For since the creation of the world His invisible attributes - His eternal power and divine nature have been clearly seen, because they are understood through what has been made. So people are without excuse. (21) For although they knew God, they did not glorify him as God or give Him thanks, but they became futile in their thoughts and their senseless hearts were darkened. (22) Although they claimed to be wise, they became fools”
Romans 1:18-22

However, the real question is - *“What is the best explanation for your purpose in life?”* If Scripture from the first verse in Genesis to the last verse in Revelation is true, then each person should be concerned with their future destiny and specifically, where you will spend eternity. The Bible clearly says:

“All have sinned and come short of the Glory of God”
Romans 3:23

Those without a personal acceptance of God will spend eternity in a lake of fire as stated in Revelation 20:15. However, God has provided an alternate choice and that choice is a free gift that only needs to be accepted by you as follows:

“For God so loved the world, that He gave his only begotten Son, that whosoever believeth in Him should not perish, but have everlasting life”
John 3:16

“For whosoever shall call upon the name of the LORD shall be saved”
Romans 10:13

This is God’s message to you, so have you accepted His free gift of eternal life?

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