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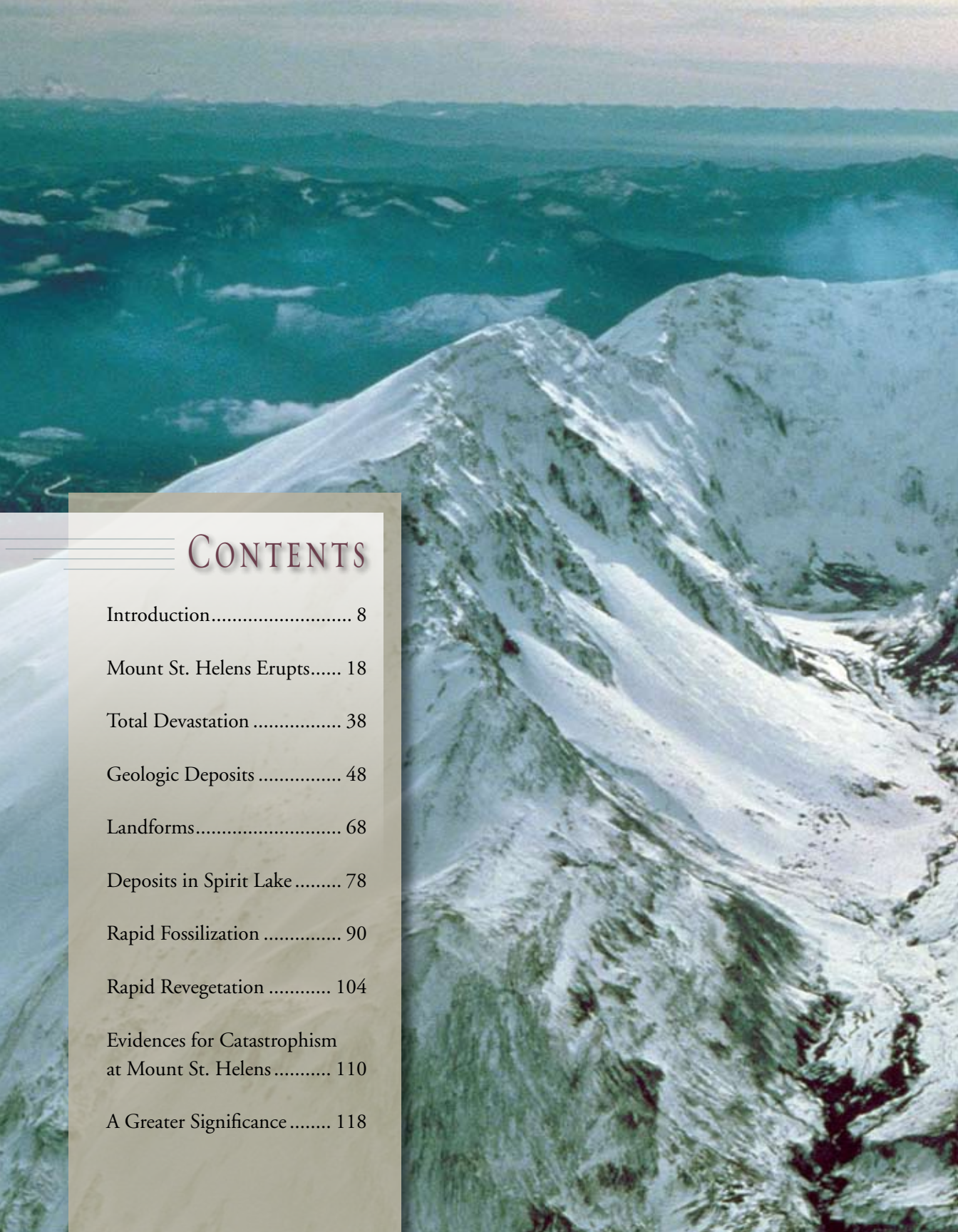

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On May 18, 1980, the volcanic eruption of Mount St. Helens shocked the world with its display of unbridled explosive power. The eruption that day fundamentally challenged our way of thinking about geologic events, especially events of the past.

In contrast to most volcanic eruptions, Mount St. Helens was well studied. It had been threatening to erupt for decades and, for six weeks prior to the main eruption, it was obviously building up for a major episode. Geologists from many countries gathered at Mount St. Helens to witness the eruption and the processes it spawned. Direct observation, aerial photos, satellite images, seismographs, laser-survey devices, and even radar readouts allowed geologists to piece together, in extraordinary detail, what happened that day at the volcano.

Of great interest was the realization that the results of the Mount St. Helens eruption that *were* observed were similar to results of past processes that were *not* observed. No geologist can go back in time to observe the past, but we can observe present processes. By comparing the results of the present processes with those of past processes, we can come to some conclusions about the nature of those unknown events of the past.

Ever since the late 1700s, geologists have been accustomed to thinking about the past in terms of uniformity of processes and process rates. Their basic assumption is that things in the past occurred much the same as they occur in the present. All geologists are taught to think that "the present is the key to the past" — that only those things which are possible today have gone on in the past and that present processes, operating at essentially their present rates, scales and intensities, have accounted for all that we observe.

However, during the decade before the 1980 eruption, geologists began to express their dissatisfaction

with strict uniformitarian thinking. They had noticed in the geologic record that events of the past produced rock units, fossil beds, and erosional remnants far different from the kinds of things produced today. Geologists also began to entertain the notion that episodic catastrophes had done more to shape the earth than did long periods of uniformity.

Lava fountain of the Pu'u'O'o cinder & spatter cone on Kilauea Volcano Hawaii (Photo by J.D. Griggs)

Leading the way in this revolution in geologic thinking were biblical catastrophists, those who believed that the past was at times very different from the present. These scientists believed that there had been an episode of supernatural creation during the six days of the creation week mentioned in Genesis 1. Present processes are not creative processes and thus those creation events were accomplished by different, non-uniform processes. Likewise, not long after creation, the world had been restructured by a global cataclysm in the days of Noah. Floods today achieve much geologic work, but this dynamic, world-wide hydraulic and tectonic event accomplished unimaginable amounts of geologic work in a short period of time. This work included continental tectonics, area-wide volcanism, extremely large hurricanes, and similar events. It involved large-scale erosion, deposition, and fossilization. In short, that flood would have left its mark all over the globe. No place on planet Earth escaped those great waters.

Determining the nature of the past catastrophic processes that occurred in Noah's flood has always been difficult. Such a global cataclysm is so far outside of our experience that it is hard even to imagine what it would have been like. What would be the end products of devastation on such a massive scale? Thankfully we will never again have to experience such a cataclysm. However, every now and then an event occurs in the present that expands our imagination and helps us

Volcanic eruptions bring to the surface much material formerly deep within the earth. Surprising amounts of water and gas accompany the magma to the surface. Dissolved, superhot water within magma makes for explosive eruptions on the continents and the ocean floors. (Photo by C. Heliker)

understand what the great flood of Noah's day may have been like. The eruption of Mount St. Helens did just that.

Other volcanoes have erupted in recent history and were well studied. Likewise, tsunamis have devastated coastlines. Huge earthquakes have wrought great havoc. Hurricanes have inundated coastlines, eroding and depositing sediments. None of these, however, could compare with Mount St. Helens in its variety of processes, or as a teaching tool to the earth scientist. Using it as an analogy, we can more accurately infer the nature of the processes involved in the Great Flood.

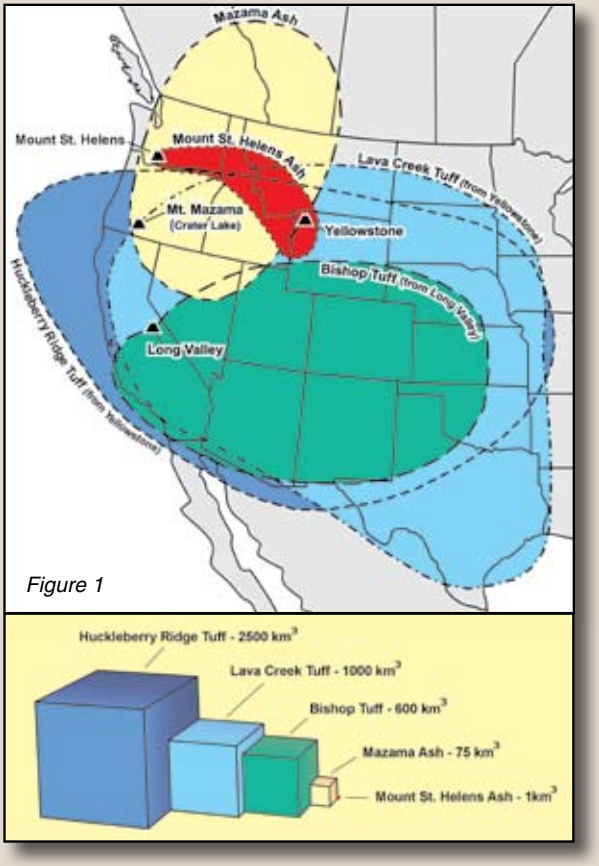


Figure 1

Compared to other historic volcanic eruptions, Mount St. Helens was rather small to average. Some idea of the colossal size of some ancient volcanic eruptions is shown in Figure 1. The last big explosion at Yellowstone, for example, was over 2,000 times the explosive power of Mount St. Helens.

Some may object to the use of Mount St. Helens as an analogy for Noah's flood. Mount St. Helens was a volcanic event; Noah's flood was a hydraulic event. Thus some might claim that the two could hardly be comparable.

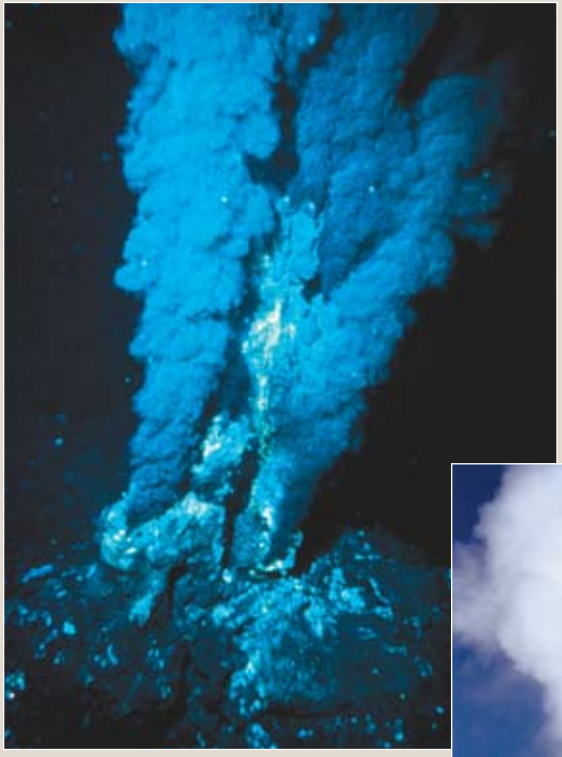
When the nature of both is fully understood, however, the analogy becomes quite apparent. The Great Flood, as described in the Bible, primarily involved water; but the processes God used to bring about that event were predominately volcanic and tectonic. God tells us that, "In the six hundredth year of Noah's life, in the second month, the seventeenth day of the month, the same day were all the fountains of the great deep broken up, and the windows of heaven were opened. And the rain was upon the earth forty days and forty nights" (Genesis 7:11, 12).

Evidently, the initial cause of the Flood was the breaking open of the fountains of the great deep. The "deep" in Scripture refers to the ocean, thus the "great deep" would be the deep ocean. The "fountains" appear to be a reference to ocean bottom volcanoes erupting suddenly. On that one particular day, all the fountains of the great deep were broken open. Their remains are found today all over the world. This breaking open of the earth's crust was timed on God's cue, using natural processes operating within His providential care.

Genesis 7:11 indicates that the main power source for the Flood was internal tectonics within the earth. However, this does not disallow an external trigger event. Many Flood geologists have begun to speculate that perhaps at that moment the earth was passing through an asteroid belt or was otherwise being bombarded by meteorites. The Moon, Mars, and Venus are pockmarked with such impacts. Such a swarm could hardly have missed the Earth. The craters were mostly obliterated by the ensuing Flood waters, but remains of many large craters can still be seen, especially from satellites high above.

The word "fountains" no doubt includes volcanic events, which were spewing out not only lavas but also subterranean waters and chemicals and bringing them all to the surface. Today we know that the interior of Earth is comprised of rock that contains much water between its mineral grains — water that has never before been on the surface of the Earth. Without a doubt, much new water was added to the surface of the Earth during the Flood by these fountains.

Furthermore, we know what happens today when a volcano erupts at the bottom of the ocean. The movement of the volcano imparts energy to the surrounding water. Water is incompressible and therefore transfers that energy laterally as a giant sea wave that moves at several hundred miles per hour. If the energy wave passes beneath your boat while in deep water, you might not even notice anything unusual. However, when the water depth is shallow, the energy picks up



Remnants of the "fountains of the great deep" may be observed today as "black smokers" on the ocean floor. Superheated brines, containing abundant dissolved chemicals, boil the water above as they gush forth into the deep ocean.

Old Faithful is fed by an underground piping system reminiscent of pre-flood conditions.

New volcanoes sometimes erupt beneath the sea.

the water into a big wall of water that slams into the shoreline at great speed. This ocean wave is known as a tsunami or colloquially as a "tidal wave." Devastation from an individual tsunami today can be enormous. We find it hard to imagine what happened when "all the fountains of the great deep" broke open on the same day producing tsunamis that raced around the earth from every direction colliding with the continents and colliding with each other. The Flood was much more cataclysmic than we typically imagine.

Those undersea volcanic eruptions would have heated the water surrounding the underwater vent, perhaps even boiling the water above. This would have sent huge steam plumes rising into the atmosphere, where they condensed and fell as rain. The Bible says that "the windows of heaven were opened," and it must have seemed like a dam in the heavens had broken.

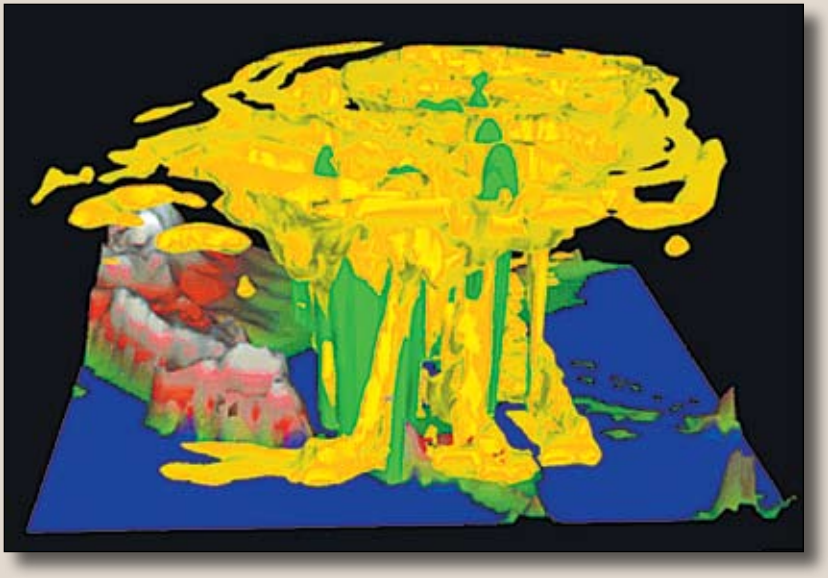
The lava from these eruptions builds new islands.

This is a reminder of the many volcanoes that erupted during Noah's flood.
(All photos on page by J.D. Griggs)

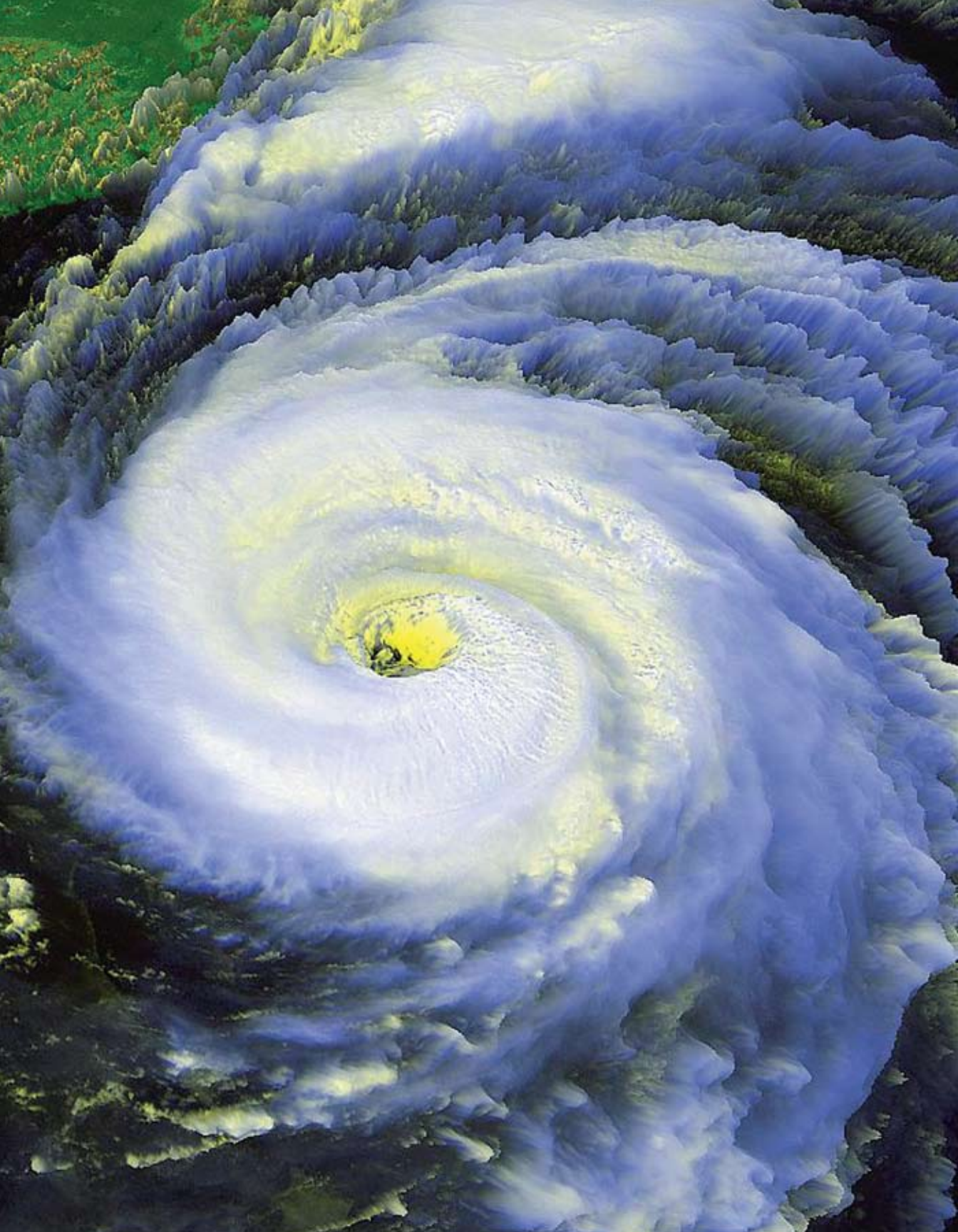
The Bible seems to hint that there was a great deal more water in the atmosphere before the Flood than there is now, but we know of no way that excessively large volumes of water could have been stored there. Enough moisture existed in the atmosphere to cause quite a bit of rain, but the water source had to be continually replenished by waters rising up into the atmosphere from the "fountains" below. This replenishment allowed it to rain a special rain for forty days and forty nights, but, according to the biblical account, rain continued for many days. "The fountains also of the deep and the windows of heaven were stopped, and the rain from heaven was restrained; and the waters returned from off the earth continually: and after the end of the hundred and fifty days [not just forty days] the waters were abated" (Genesis 8:2, 3). That water must have come from evaporated sea water.

Thus, we see that much of the devastation due to Noah's flood was volcanic and tectonic in nature, pointing us right back to Mount St. Helens as an analogy.

As surprising as it may seem, most of the damage done at Mount St. Helens during the 1980 eruption and its sequels was water related. To be sure, a great deal of volcanic devastation occurred, but most of the damage was done as the glaciers on the mountain's peak melted and descended catastrophically to the plains below. As that melted ice cascaded down the mountain, it removed trees, boulders, and animals. It eroded canyons and uprooted the forest. In short, it ravaged the entire area. One mudflow followed another until a series of pancake-like layers of mud and rock had been deposited in the lowlands and in the drainage basin below. These dynamic water processes added to avalanche and air-fall



Creationists speculate that great oceanic volcanoes during the Great Flood must have heated the ocean water above on a regional scale, resulting in monster hurricanes. Computer models can simulate what would happen today if the temperature in the Gulf of Mexico increased 20°F (10°C) from what it is today. The result would be a "hypercane" with an area-wide rainfall of 10 inches per hour (25 cm). The Great Flood would have been even more devastating than these hypercanes.

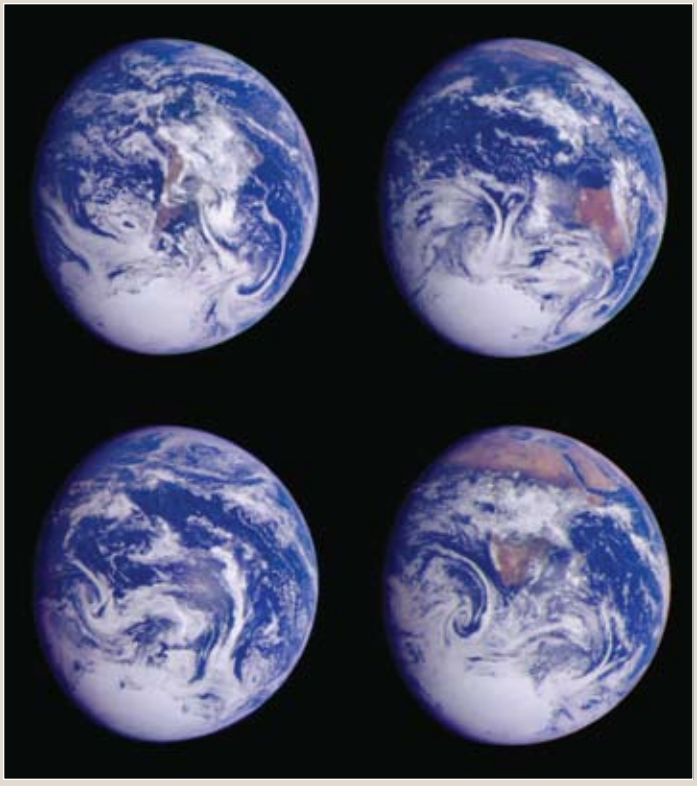


deposits which together totaled up to 600 feet (180 meters) of stratified sediments, containing dead plants and animals — some of which are now fossilizing. In a very short period of time, widespread and thorough devastation reworked a vast area.

A lake on the mountain's north flank was severely affected by the avalanching debris. By late afternoon of May 18, 1980, over one million trees floated on the lake's surface; and in the following months as those trees decayed and became waterlogged, a thick layer of peat was deposited on the lake bottom. Other mudflows and avalanches eroded huge canyons and changed the topography of the affected area.

Thus, much of the flood of Noah's day was volcanic and tectonic in nature, and much of the Mount St. Helens eruption involved water-related processes. We are justified in using Mount St. Helens as an analogue for the great flood of Noah's day.

When it was over, processes at Mount St. Helens accomplished the same sort of geologic work that biblical creationists usually attribute to the Great Flood, although on a much smaller scale and at a lower intensity. From the eruption of Mount St. Helens, which we did observe, we learned many lessons which help us understand Noah's flood, which we did not observe.



Worldwide rainfall means worldwide erosion and regional deposition of sediments. These processes would be operating at catastrophic rates, scales, and intensities far different from the kinds of processes that we observe today. According to the Bible, ". . . the world that then was (i.e. before the Flood), being overflowed with water, perished" (2 Peter 3:6). The world we live in today is the flooded, destroyed remnant of the once "very good" (Genesis 1:31) created Earth.