When did the Yellowstone super-volcanoes erupt?

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Yellowstone National Park, Montana and Wyoming, USA, is famous for its geysers that are caused by hot magma superheating water below the surface (figure 1). Yellowstone National Park is composed of a series of collapsed calderas. It is the end product of approximately three super-volcanic eruptions and many small ones.[1,2]

At first, uniformitarian scientists thought the Yellowstone caldera was a result of only one huge eruption because its ash had spread over the western and central United States. However, dating the ash revealed three ages. So, it is widely believed that three Yellowstone super-volcanic eruptions occurred, 2, 1.2, and 0.6 Ma ago, late in their timescale. So, when did this super-volcano erupt in biblical Earth history?

Evidence all the eruptions occurred during the Flood

While working on the Ice Age and the geomorphology of the upper Wind River Basin between Dubois and Riverton, Wyoming (figure 2), I came to the conclusion that it is highly likely that the eruptions took place during the Flood.[3] The upper Wind River Valley is about 150 km (95 mi) southeast of the Yellowstone caldera and well within the deposition of ash. Geomorphology is the study of the surface features of the earth that are subdivided into landforms.[4]

Secular scientists had claimed that multiple river terraces in this valley were related to numerous ice ages.[5] While researching the area, I noticed that the bottom two terraces, which could hardly be distinguished from each other, were more likely glacial outwash terraces related to the ice cap over the Wind River Mountains to the south. Outwash terraces have angular boulders, sometimes over 2 m (6.5 ft) long connected to a terminal or lateral moraine (figures 3 and 4).

Furthermore, the higher terraces turned out to be pediments, which are flat planation surfaces at the foot of the mountains.[6] Once formed, the pediments were eroded into erosional remnants (figure 5). They are unrelated to mountain glaciation. Below one of these pediments within the thin capping pediment gravel, I found volcanic ash. Secular scientists had determined that this ash was from the *last* eruption of the Yellowstone super-volcano (figure 6).

Figure 1. Old Faithful geyser in Yellowstone National Park

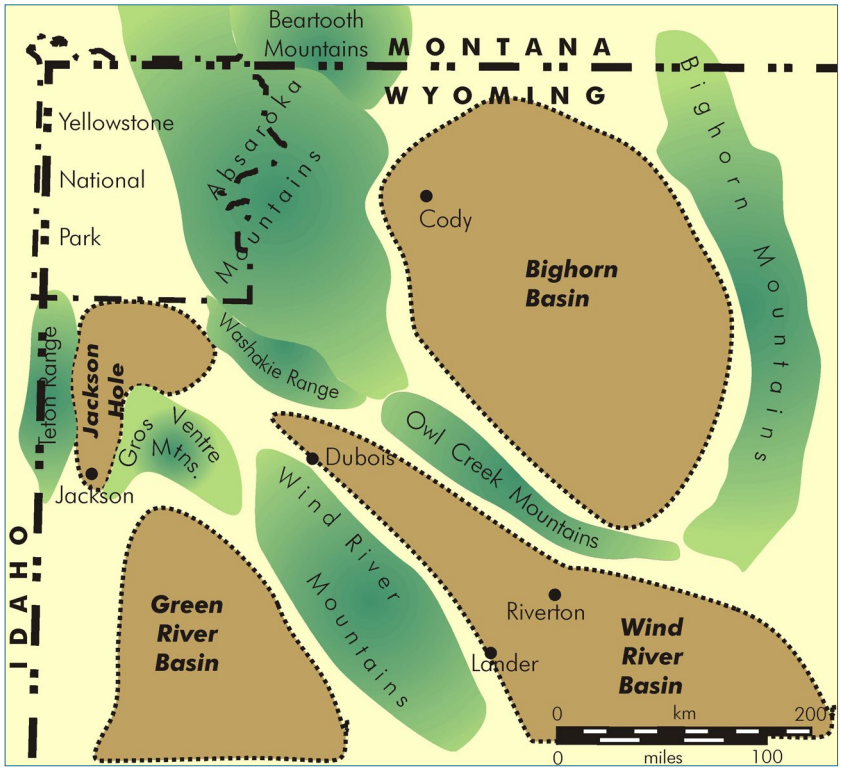

Figure 2. Map of northwest Wyoming showing the upper Wind River Basin from Dubois to Riverton, Wyoming, USA

Figure 3. A lateral moraine in the upper Wind River Valley

Figure 4. The top of the outwash terrace from the moraine in figure 3

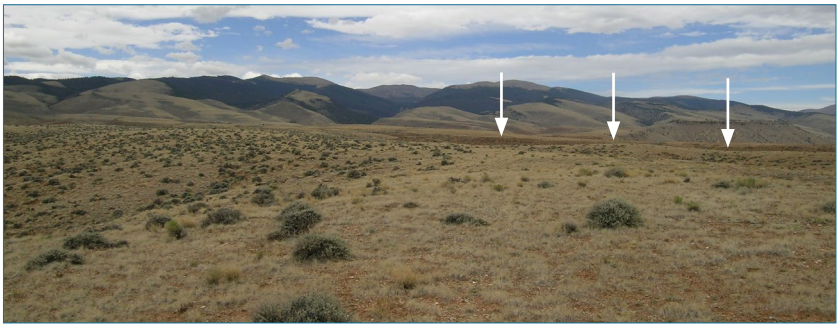

Figure 5. The top of a partially eroded and dissected pediment along the Wind River Mountains, west of Dinwoody Lakes.

Figure 6. Close up of Lava Creek B ash within the gravel from the pediment shown in figure 5

Pediments formed near the end of the Flood by channelized flow

Pediments are a valley feature caused by Flood runoff and are often capped by rocks rounded by water action. Pediments were formed by the last phase of the Flood, the Channelized Flow Phase.[7] Pediments are not forming today. Some of the capping rocks were transported from far away, providing evidence that pediments were eroded by currents moving *down* the valley. This is what we would expect to find with global Flood runoff.

If ash from the last eruption within pediment gravel was laid down during Flood runoff from the last of three eruptions, it would indicate that all of the eruptions of the Yellowstone super-volcano took place at the end of the Flood.

Other confirming evidence

The second piece of evidence that I noted was volcanic debris from the first Yellowstone caldera eruption, 'dated' 2.1 Ma, makes up the top of some ridges that were left behind after extensive valley erosion at the edge of the national park. It is likely that this erosion happened late in the Flood and occurred during the channelized phase of the Flood runoff.

Third, Yellowstone volcanic debris is also found on Signal Mountain in Grand Teton National Park, immediately to the south of Yellowstone. The volcanic debris and the sedimentary rocks in this small mountain are tilted down to the west at about 15° (figure 7). This implies that the valley of Jackson Hole was still sinking and filling with debris as movement along the Teton fault continued. This fault shows a vertical offset of about 9,000 m. It moved as the Teton Mountains rose and the continental crust to the east sank. This activity is typical of late Flood differential vertical tectonics in many mountain ranges across the globe and took place at much the same time as adjacent basins filled with sediments and volcanic debris subsided.

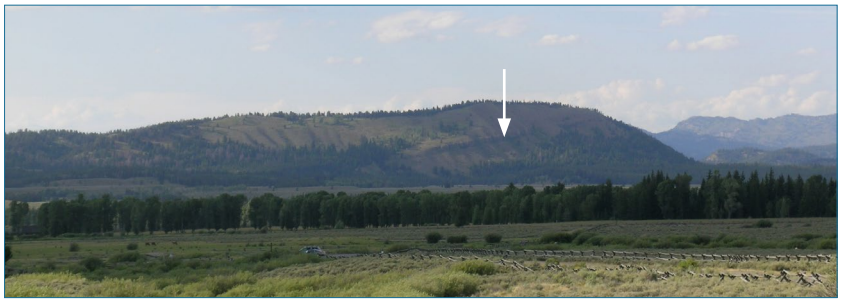

Figure 7. Signal Mountain, with the Huckleberry Ridge tuff dipping toward the west (arrow)

Figure 8. Lava Creek ash from the last Yellowstone super-eruption in Cudahy ash pit, about 12 km north of Meade, Kansas, USA

A fourth piece of evidence is that Yellowstone National Park had an ice cap up to 1,000 m thick[8] that formed rapidly during the Ice Age.[9] The ice cap would have started developing right after the Flood. If the super-volcano erupted anytime during the formation of this ice cap, the heat would have melted practically all the ice. Huge floods and debris flows would have rushed into the surrounding valleys. However, the ice seems to have grown without interruption during the Ice Age.

Further implications

Often in creation research or any research, one conclusion leads to more questions and implications. The discovery that all of the Yellowstone super-eruptions took place during the Flood helps date events related to the ash deposits. The ash is claimed to have been deposited over a large area of the USA. This assumes uniformitarian scientists have correctly identified the ash as coming from the Yellowstone caldera, including that from the last major eruption (figure 8). If they are correct, then the sedimentary rock or uncemented sediments associated with the ash would also be from the Flood.[10]

The top layers of sedimentary rock in the High Plains have numerous mammal fossils, based on the fossils found where the top layers have been dissected. This suggests that there are probably millions of mammals buried in these top layers of sedimentary rocks. Since Ice Age mammals also died in these valleys, mammal fossils could have eroded from the valley walls and mixed with the Ice Age animals, making it difficult to tell which animals lived during the Ice Age and which were buried in the Flood.

Placing all of these mammals in the layers that formed during the Flood means that creationists don't need to explain them all by spreading from the 'Mountains of Ararat' across the Bering Land Bridge between Siberia and Alaska.[11] The mammals would also have had to multiply into the millions, then be overwhelmed by a post-Flood catastrophe that somehow spread sediments over a wide area of the High Plains. No mechanism is ever offered to explain how 'local catastrophes' could spread sediments so extensively.

Summary

For over 25 years, I have wondered when the Yellowstone super-eruptions happened in biblical Earth history. Several observations showed that they likely took place during the Flood. Data from the Upper Wind River Valley research project revealed strong evidence for Flood eruptions. Ash from the last eruption was found in pediment gravel, showing that all of the Yellowstone eruptions took place late in the Flood. A Flood origin of the ash also led to the interpretation that the numerous mammals buried in the top layers of High Plains sedimentary rocks were likely buried in the Flood also.

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