Chapter 35

Difficult or Borderline Cases

I have pinpointed the time of the Flood/post-Flood boundary in the late Cenozoic, the Miocene, Pliocene, and Quaternary. This timeframe is rather broad because we cannot rely on radiometric, fossil, or any other dating method to give reliable dates. Each location needs to be examined on its own merits. I will briefly mention some of these difficult or borderline terrestrial cases. Just recently, with further research, I have been able to place two within the Flood.

Ocean bottom sediments will be excluded since they are commonly dated by microfossils, and it is almost impossible to know which microfossils lived before the Flood, during the Flood, or after the Flood, or any combination. It is possible that even ocean bottom early Cenozoic sediments are post-Flood,[1] especially if ice-rafted debris is used as a criterion. Real ice-rafted debris would be post-Flood, but the problem is identifying it, since uniformitarian scientists could be interpreting coarse Flood sediments as ice rafted debris.

Australian Marsupials

Perhaps the most well-known case to decide is whether the marsupial fossils of Australia are from the Flood, post-Flood, or both. (I will not deal with the equally interesting question of how the marsupials arrived in Australia; that is a study for another research project.). Although we need to be careful not to jump to conclusions, the fact that marsupial fossils are found in the Cenozoic on *all* continents, especially South America,[2] favors a Flood date. Most of the sedimentary rocks on other continents where marsupial fossils are found also appear to be from the Flood. Therefore, it is likely some Australian fossil marsupials are from the Flood. The fact that there is a wide variety of marsupials in Australia at present would favor at least some marsupial fossils being post-Flood. As with other criterion, geological context must be applied.

A large number of the Australian fossil marsupials dating from the Quaternary back to the Miocene, are found in caves[3,4]—a post-Flood context. This would push the Flood/post-Flood boundary into the Miocene in those particular locations. Some marsupial fossils are dated as late as Oligocene, which means that the boundary may need to be stretched back to that time, if these are truly post-Flood. This depends upon the geological context and of course assumes the uniformitarian date. However, one of the key dating methods applied is "stage of evolution,"[5] and so these dates can be ignored. Evolutionists are focusing on what they think are primitive features in marsupials to "date" fossils as Oligocene, Miocene, or Pliocene. Their relative biostratigraphy dates would then mean very little from a Flood geology point of view.

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[1] Oard, M.J., 2001. Vertical tectonics and the drainage of the Flood waters: a model of the middle and late Diluvian period – part II. *Creation Research Society Quarterly* 38(2):79–95.

[2] Wood, T.C. and Murray, M.J., 2003. *Understanding the Pattern of Life: Origins and Organization of the Species*. Broadman & Holman Publishers, Nashville, TN.

[3] Macken, A.C., Jankowski, N.R., Price, G.J., Bestland, E.A., Reed, E.H., Prideaux, G.J., and Roberts, R.G., 2011. Application of sedimentary and chronological analyses to refine the depositional context of a Late Pleistocene vertebrate deposit, Naracoorte, South Australia. *Quaternary Science Reviews* 30:2,690–2,702.

[4] Black, K.H., Archer, M., Hand, S.J., and Godthelp, H., 2010. First comprehensive analysis of cranial ontogeny in a fossil marsupial—from a 15-million-year-old cave deposit in Northern Australia. *Journal of Vertebrate paleontology* 30(4):993–1,011.

[5] Megirian, D., 1994. Approaches to marsupial biochronology in Australia and New Guinea. *Alcheringa* 18:259–274.

On the other hand, the oldest marsupials are claimed to be from the Eocene.[6,7] Interestingly, these marsupials are fossilized with a wide variety of other organisms, such as placental mammals and reptiles. As a result, these fossil locations could easily be from the Flood, especially in view of the fact that early Cenozoic fossil diversity is not much different than what is found on other continents.

Clearly, much more research is required to properly assign a Flood/post-Flood boundary based on Australian marsupials. Since we cannot rely on their dates in a relative sense, we can say that the Flood/post-Flood boundary where marsupials are found in caves is as old in some locations as the Miocene (or possibly the late Oligocene).

Modern and Ice Age Animals from South and Central America

The situation with South and Central American mammals is similar to that of the Australian marsupials. A wide variety of unique mammals live in South and Central America, and during the Ice Age, they included toxodons, glyptodonts, ground sloths, and New World monkeys. Toxodons are animals about 1.5 m tall with a heavy rhinoceros-like body and a hippopotamus-like head. Glyptodonts are a strange armadillo-like creature the size of a small car. These mammals either arrived by crossing the Bering Land Bridge, which would not have been all that cold even during the winter[8] or are from post-Flood log mats.[9] There do not seem to be any other options within Flood geology. Some may think it impossible to raft such large animals from the nearest shore of the "mountains of Ararat," but evidence for log mat rafting of large animals comes from the fact that giant ground sloths lived in the West Indies during the Ice Age.[10] These animals could not have arrived on these islands unless they used rafts.[11]

Similar fossils of these large animals are found in South, Central, and even in southern North America. We can rarely use obvious post-Flood features, such as caves, to help us. I would say some of these fossils likely are from the Flood, for instance the discovery of mammals, including the skull of a New World monkey, in thick, "Late Cretaceous" volcaniclastic rock in Chile.[12] The strata were of course "re-dated" to the middle and late Cenozoic, showing how they make sure there are no "contradictions" to their sacred geologic column.[13] So, as in Australia, the Flood/post-Flood boundary must be placed in the Miocene or Pliocene at some locations. Much more research is required to know which mammal fossils from the unique South and Central American fauna are from the Flood and which are post-Flood. As with Australia, my suspicion is that it is both and we will need to reject the uniformitarian dating methods and instead go with the geologic information.

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[6] Godthelp, H., Archer, M., Cifelli, R., Hand, S.J., and Gilkeson, C.F., 1992. Earliest known Australian Tertiary mammal fauna. *Nature* 356:514–516.

[7] Wuethrich, B. 1997. Will fossil from down under upend mammal evolution? *Science* 278*:1,401–1,402.*

[8] Oard, M.J., 2004. *Frozen in Time: Woolly Mammoths, the Ice Age, and the Biblical Key to Their Secrets.* Master Books, Green Forest, AR.

[9] Oard, M.J. The Genesis Flood and Floating Log Mats: Solving Geological Riddles, Creation Book Publishers ebook, Powder Springs, GA, 2014.

[10] Koch, P.L. and Barnofsky, A.D., 2006. Late Quaternary extinctions: state of the debate. *Annual Review of Ecology, Evolution, and Systematics* 37:215–250.

[11] Oard, M.J., Post-Flood log mats potentially can explain biogeography. *Journal of Creation* (in press).

[12] Flynn, J.J., Wyss, A.R., Charrier, R., and Swisher, C.C., 2012. An Early Miocene anthropoid skull from the Chilean Andes. *Nature* 373:603–607.

[13] Oard, M.J., 2013. The reinforcement syndrome ubiquitous in the earth sciences. *Journal of Creation* 27(3):13–16.

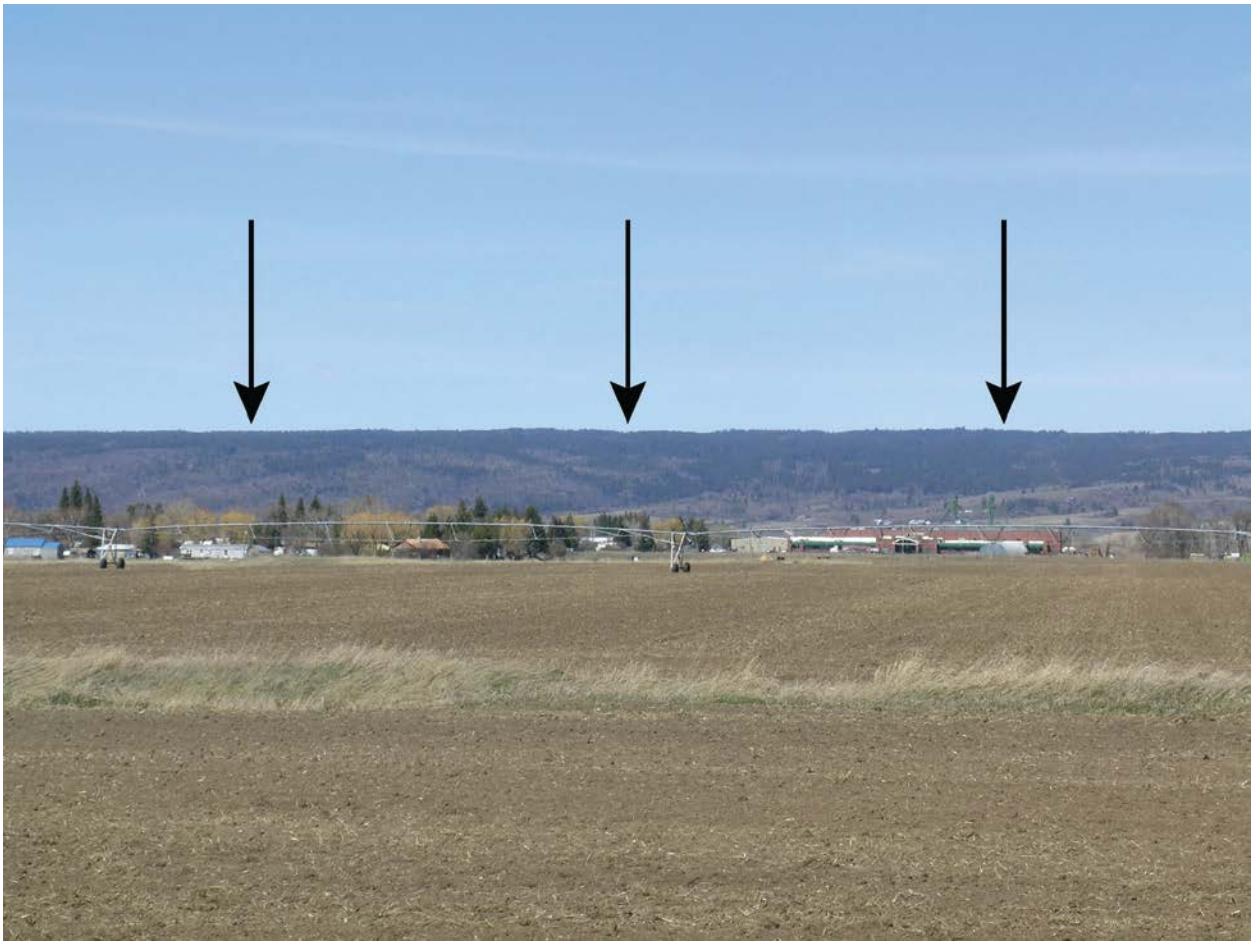


Figure 35.1. The southern edge of the Yellowstone caldera (arrows) that formed the Mesa Falls tuff (view north from near Ashfork, Idaho, USA).

The Yellowstone Super-Eruptions

There are several large volcanic areas within the Rocky Mountains. One is the super-eruption in Yellowstone National Park, the first national park in the United States, in northwest Wyoming and small areas of Montana and Idaho.[14] A super-volcano is a volcanic eruption with an ejecta volume greater than 1,000 km^3, about a thousand times larger than normal eruptions. The Yellowstone super-volcano is believed to consist of three generally overlapping calderas from three super-eruptions. The calderas are mostly obscured by lava from several smaller subsequent eruptions. But, the caldera around Island Park, Idaho, is still discernible (Figure 35.1). The timing of these eruptions within the uniformitarian/evolutionary timescale is based on fission track dating of cemented volcanic ash called tuff. These tuffs and ages are: (1) the Huckleberry Ridge tuff dated at 2.1 million years, (2) the Mesa Falls tuff dated at 1.3 million years, and (3) the Lava Creek tuff dated at 0.65 million years.[15]

The big question is whether these eruptions are Flood, post-Flood, or both. I had been wondering about this for about 25 years. I just finished a research project on the upper Wind

[14] Hergenrather, J., Vail, T., Oard, M., and Bokovoy, D., *Your Guide to Yellowstone and Grand Teton National Parks: A Different Perspective*, Master Books, Green Forest, AR, 2012.

[15] Good, J.M and Pierce, K.L., *Interpreting the Landscape: Recent and Ongoing Geology of Grand Teton & Yellowstone National Parks*, Grand Teton Natural History Association, Moose, WY, 2002.

River terraces[16]. There I found ash from the last Lava Creek super-eruption in what was considered a terrace remnant but is really a pediment remnant (Figures 35.2 and 35.3). Since pediments were formed during the Flood (see Chapter 26), I concluded the ash was laid during the Flood. That would place all of the Yellowstone super-eruptions during the Flood.[17]

Figure 35.2. Lava Creek B ash layer from the last Yellowstone supereruption on top of bedrock in WR7 (Hans and Lisa Reinhardt for scale).

[16] Oard, M.J., 2014. Were the Wind River Terraces Caused by Multiple Glaciations? *Creation Research Society Quarterly* 51(3):154–177.
[17] Oard, M.J., 2014. Relating the Lava Creek Ash to the post-Flood boundary. *Journal of Creation* 28(1):104–113.

Figure 35.3. Close up of Lava Creek B ash in the pediment of Figure 35.2.

Late Cenozoic Mammals Southern High Plains

The position of the late Cenozoic mammals on the southern High Plains is another difficult and borderline case that was resolved in the summer of 2013. Yellowstone ash locations, if the identification is correct, were used to date mammals during the Flood in the canyons of southwest Kansas near Meade and in northwest Texas. The Yellowstone ash is claimed to be present in patches near the top of the High Plains of southwest Kansas.[18,19] The ash can be viewed in erosional cuts on the High Plains. The fossils below and within the ash would be from the Flood and those above could be either Flood or post-Flood or both. The ash is described as being near the top of the Meade Formation, as in the Cudahy volcanic ash pit (Figure 35.4) about 7.5 miles (12 km) north of Meade, Kansas. This ash is considered the Lava Creek ash,[20] and so these fossils are Flood fossils. The Borchers local fauna, about 8 miles (13 km) south of Meade,

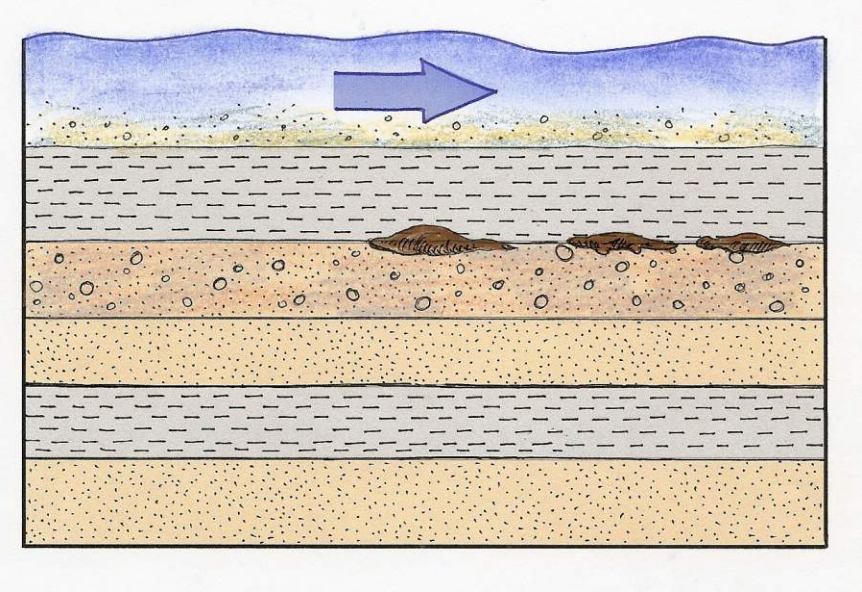
[18] Hibbard, C.W., Stratigraphy and vertebrate paleontology of Pleistocene deposits of southwestern Kansas, *GSA Bulletin* **55**:707–754, 1944.
[19] Frye, J.C. and Hibbard, C.W., Pliocene and Pleistocene stratigraphy and paleontology of the Meade Basin, southwestern Kansas, *Kansas Geological Survey Bulletin 38, Part 13*, Kansas Geological Survey, University of Kansas, Lawrence, KS, 1944.
[20] Bell, C.J. and Repenning, C.A., Observations on dental variation in *Microtus* from the Cudahy Ash Pit fauna. Meade County, Kansas and implications for Irvingtonian microtine rodent biochronology, *Journal of Vertebrate Paleontology* **19**(4):757–766, 1999.

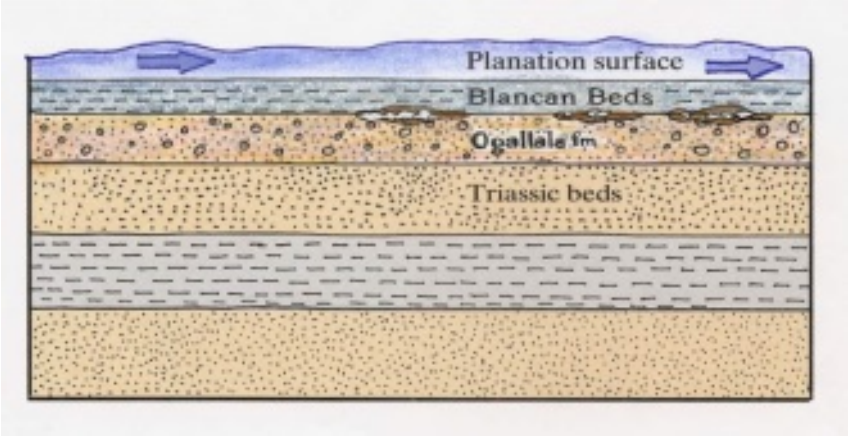
is found within and slightly above the Yellowstone ash in the walls of the valley. Based on the ash this too is very likely from the Flood.

Figure 35.4. Close up of the volcanic ash in Cudahy ash pit, north of Meade, southwest Kansas.

The Meade Formation lies above the Ogallala Formation. Both make up the *walls* of the valleys cut into the High Plains. The strata of the top of the High Plains in this area extend tens to hundreds of miles in all directions. Therefore a Flood context is suggested according to criterion 18 in Table 34.1 of Chapter 34. The Meade Formation contains a wide variety of mammals, placing the burial of these mammals during the Flood.

I visited Joe Taylor from the Mount Blanco Fossil Museum in Crosbyton, northwest Texas. He showed me the stratigraphic relationships of the abundant mammals he has found in Blanco Canyon along the east edge of the Llano Estacado about 30 miles (50 km) east of Lubbock, Texas. Of note, the context was similar to what I observed in southwest Kansas. The mammal fossils were found *within the walls* of the canyon in dissected areas of the southern High Plains. I concluded the mammal fossils found in the walls of Blanco Canyon are from the Flood.

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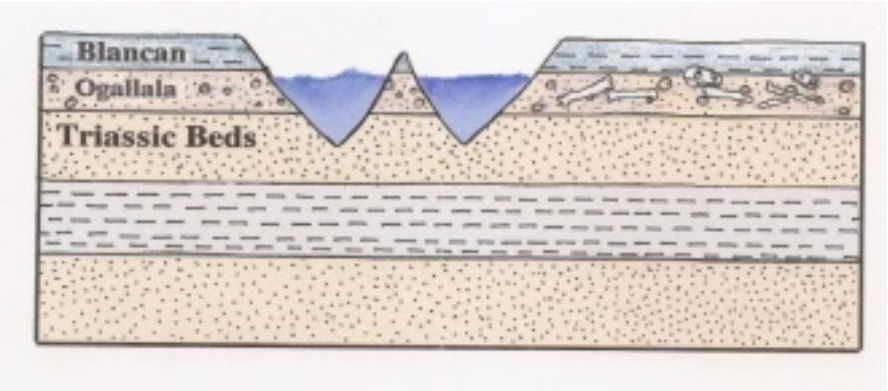
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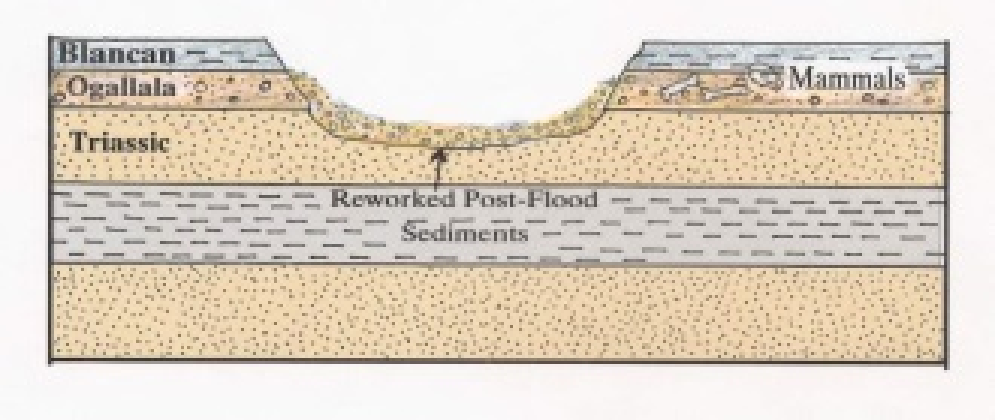

Figure 35.5. Schematic of deposition through sheet and channelized erosion during the Flood showing the context of mammals in Blanco Canyon (drawn by Mrs. Melanie Richard).

a. Deposition of sediments on the southern High Plains of the USA.

b. Sheet erosion of the top layers forming a planation surface (the Llano Estacado).

c. Channelized erosion cutting canyons and valleys.

d. Close up of Blanco Canyon today showing valley walls with Flood mammals and reworked sediments in the valley bottom that contain mostly post-Flood animals.

Figure 35.5 shows a schematic of the Flood context of the mammals found within dissected valleys in the southern High Plains. In Figure 35.5a, thick sediments were deposited on the southern High Plains during sheet deposition, either late in the Flooding Stage or early in the Retreating Stage. Then sheet erosion removed the top layers of sediments and sedimentary rocks forming a planation surface during the Sheet Flow Phase of the Retreating Stage of which the Llano Estacada is one prominent planation surface (Figure 35.5b). It is not certain whether the Ogallala Formation, consisting of long transported Rocky Mountain rocks and sand during the Flood, and the Blancan beds above were deposited as a lag during planation or was part of the original strata. However, Figure 35.5b places the strata at the end of the sheet erosion. Sheet erosion was transformed into channelized erosion during the Channelized Flow Phase which then carved valleys and canyons, Blanco Canyon being one (Figure 35.5c). Figure 35.5d is a close up of the Blanco Canyon and shows after the Flood ended, there was post-Flood slumping and erosion that eroded the wall sedimentary rocks down into the valley. This was probably due to the much higher rainfall during the post-Flood Ice Age. The Ogallala Formation and the Blancan beds are part of the walls of the eroded valleys and extend hundreds of miles toward the west, north, and south and lie below the surface of the southern High Plains—another indicatin of a deposition during the Flood. Sometimes, different formation names are given to this strata at various locations.

Mammals found within the walls would be from the Flood while mammals discovered in the debris eroded from the walls would predominantly be from the post-Flood period. Based on southwest Kansas and Blanco Canyon, as well as personal communication from Joe Taylor, mammals are abundant in many other valleys and canyons. If extrapolated in the subsurface, there must be millions of buried mammals in the southern High Plains. This many mammals would be hard to explain in a post-Flood context. This would be assuming mammals rounded the Bering Land Bridge or arrived on log mats,[9] multiplied into the millions, and were buried in sheet deposits within the strata of the southern High Plains. This seems impossible after the

Flood. Based on the dates of the Blancan beds, it looks as though the Flood/post-Flood boundary is in the mid Pleistocene in northwest and north central Texas, as well as in southwest Kansas.

Mammal Fossils in Nebraska

Several Miocene sites in Nebraska give evidence for post-Flood environments.[21,22] For instance, there is evidence of animals being asphyxiated in volcanic ash at Ashfall Fossil Beds State Historical Park (Figure 35.6). At Agate Springs National Monument, there are spiraling beaver burrows (see Figure 17.3), a few with beaver fossils.

Figure 35.6. Rhino fossil graveyard covered by the Rhino Barn at Ashfall Fossil Beds State Historical Park, Nebraska.

However, there are other indications of a Flood environment, such as most of the mammals are extinct and do not show up in the Ice Age fauna. The existence of consolidated erosional remnants at Agate Springs National Monument, and the fact that the mammals are in a huge graveyard would point to the Flood. The volcanic ash at Ashfall is not draped over the Great Plains as expected in a post-Flood ash, but is part of the strata that dips slightly westward within

[21] Akridge, A.J., and Froede Jr., C.R., 2005. Ashfall Fossil Beds State Park, Nebraska: a post-Flood/Ice Age paleoenvironment. *Creation Research Society Quarterly* 44:183–192.
[22] Akridge, A.J. and Akridge, M.E., 2008. Death on the plains of Nebraska. *Creation Research Society Quarterly* 45:126–133.

the very large Ogallala Formation. Other features at the very difficult interpretive site at Ashfall persuaded me that the site is from the Flood, in which mammals and other animals walked on BEDS before final inundation.[23] As of early 2014, the issue has not yet been resolved with the creationist literature.[24,25]

Southeast Africa Hominid Sites

The last of probably many difficult and borderline cases crops up in eastern Africa. The so-called ape-man fossils, hominids in evolutionary terminology, are often reported within caves, and unless they fell out of the walls, they would be post-Flood. But many fossils are not from caves, however. If those found in sediments are similar to those found in caves, such as *Australiopitchicus,* then this would be evidence the fossils found in sediments would also be post-Flood.

Similar arguments can be made for evidences of man, such as circular stone arrangements (if interpreted correctly) in the Olduvai Gorge found by the Leakey's, the Laetoli footprints, and tools dated from the Pliocene and early Pleistocene.[26] Some of these remains and "tools" are buried fairly deep, 1,840 feet (560 m) thick in the Koobi Fora Formation.[27] Although all of these sites are probably post-Flood, more research is required in some cases to be sure.

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[23] Oard, M.J., Are the Ashfall site sediments and fossils post-flood? *Creation Research Society Quarterly* 46(2):81–91.

[24] Akridge, A.J. and Froede Jr., C.R., 2011. Response to Michael Oard's article questiong out post-flood interpretation of the fossil animals identified at Ashfall Fossil Beds State Historical Park, Nebraska. *Creation Research Society Quarterly* 47(4):324–327.

[25] Oard, M.J., Michael Oard's response. *Creation Research Society Quarterly* 47(4):327–330.

[26] Holt, R.D., 1996. Evidence for a Late Cainozoic Flood/post-Flood boundary. *Journal of Creation* 10(1):162.

[27] Brown, F.H. and Feibel, C.S., Revision of lithostratigraphic nomenclature in the Koobi For a region, Kenya. *Journal of the Geological Society, London* 143:297–310.