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The Central and Southern High Plains Animals Likely Buried in the Flood

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Abstract

The upper diluvial boundary is difficult to determine in some areas, such as the Arctic coast of North America and the fossil locations of Australian marsupials. An even more difficult area is the top layers of sedimentary rocks of the southern and central High Plains where numerous mammal and other fossils are buried. Despite evidence of a post-Flood paleoenvironment of Agate Fossil Beds National Monument and Ashfall Fossil Beds State Historic Park, they likely are within the Ogallala Group (two or more formations). The Ogallala Group is widespread and thin and was spread hundreds of kilometers east. About half of its top was subsequently eroded. Quartzite rocks from the Rocky Mountains are marked with percussion marks indicating torrential flow. Some quartzite cobbles and boulders have spread 800 km from their source in the southern Rocky Mountains and are found on valley interfluves in central Texas. Most of the fossils in the Group are of animals not living today or during the Ice Age. It is difficult to explain how many millions of animals were buried in the southern and central High Plains with a post-Flood scenario. It is easier to explain that the animals were buried during the Genesis Flood. The apparent post-Flood features can be explained by the BEDS Model. Grass seed fossils associated with a rhino could be because grass fossils are very abundant in the Ogallala Formation.

Key Words: Agate Fossil Beds National Monument, Ashfall Fossil Beds State Historic Park, Australian marsupials, Devil's Corkscrews, Flood/post-Flood boundary Ogallala Group, tracks

Introduction

I have long been interested in the location of the important upper diluvial boundary and have advocated that the boundary is in the Late Cenozoic: the Miocene, Pliocene, or Pleistocene. My conclusion is based on 35 scientific criteria from Clarey and myself (Oard et al., 2023). We cannot be precise using the geological column because there is *not* a one-to-one correspondence with Biblical Earth history. In addition, uniformitarian scientists sometimes redate fossils or events, for example with the Antarctic Ice Sheet (see below). I have also advocated that we need to examine each location on its own merits with

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multiple criteria, since individual criterion can be equivocal. I have found that most areas are easy to determine, but there are a number around the world that are more challenging.

One of these locations includes the Late Cenozoic sediments and fossils along the Arctic Ocean of North America (Oard, 2018). Despite a few possible post-Flood features, the big picture indicates that the upper diluvial boundary along the Canadian Arctic coast is above the Pliocene, while the boundary along northern Alaska seems to be near the Miocene/Pliocene boundary.

The Australian marsupial fossil locations are another challenging area with ages claimed to be as old as Late Oligocene. But there is more to the story. These fossils were once dated as Pleistocene, which makes sense, since they seem to be post-Flood. Because of the "stage of evolution" with some "primitive" features of the fossils and a lack of "dates," the ages of the marsupials were pushed back farther and farther into the past. Secular scientists finally arrived at the Late Oligocene for some fossils. So, I agree with Arment (2020) that Australian marsupials, not including those in the early Cenozoic found on all continents, are post-Flood. The determination is valid for only the Australian marsupial locations (Oard, 2022). In this same vein, if secular geologists decide to push an obvious post-Flood feature back older than late Cenozoic, then so be it. They redated the post-Flood Antarctic Ice Sheet to be ten times older than before and placed its beginning in the early Cenozoic (Strahler, 1987, p. 254). The Australian marsupials and the Antarctic Ice Sheet clearly show why we cannot take uniformitarian "precise" dates seriously.

Figure 1. Devil's Corkscrews, Agate Fossil Beds National Monument, Nebraska (University of Nebraska, public domain).

The Central and Southern High Plains Mammals

An area that is even more difficult than the examples above would include the top layers of sedimentary rocks of the central and southern High Plains of the United States with its mammal and other fossils. McClenagan (2022) concluded that the Agate Fossil Beds National Monument, northwest Nebraska, and Cita Canyon, northwest Texas, mammals are post-Flood. Akridge and Froede (2005, 2011) and Akridge and Akridge (2008) came to a similar post-Flood conclusion for the mammals and other fossils buried at Ashfall Fossil Beds State Historic Park in northeast Nebraska. I have never been to Cita Canyon, so I won't comment on it, except to mention the types of fossils reported by McClenagan. However, I came to a different conclusion for Agate Fossil Beds National Monument, Ashfall Fossil Beds State Historic Park, and other locations in the region (Oard, 2009, 2010).

Agate Fossil Beds National Monument

One of the major valleys or canyons carved into the top of the High Plains of the United States is the Niobrara River Valley that contains Agate Fossil Beds National Monument. It shows evidence for both a post-Flood and a Flood paleoenvironment.

Evidence That Supports a Post-Flood Paleoenvironment

It is easy to understand why McClenagan came to his post-Flood conclusion since there are features that would indicate a post-Flood paleoenvironment, such as unpermineralized bones, mammal tracks, and the "Devil's Corkscrews (Daemonelix)," spiral burrows with the bones of an extinct beaver within some of them (Figures 1 and 2), as summarized in Table I.

The Bonebeds

The bonebed contains thousands of bones representing what are believed to be 9,000 mammals. The bones are mostly disarticulated and jumbled together but not badly broken or abraded.

McClenagan points out that the mammal bones were deposited as lenses within the bottom of channels cut into the top of the upper Harrison Formation, part of the Ogallala Group.[1] The bones are mostly found within two hills: Carnegie and University Hills (Figure 3). McClenagan believes the channels with the mammals were carved post-Flood into the top of the Ogallala Group.

Most of the bones are from three types of extinct animals: a small rhinoceros, the strange chalicothere, and a huge entelodont (terrible pig) that ranges from 150 to 900 kg in weight. The bones are packed into fine-grained sand, sometimes lithified; calcareous silt; and volcanic ash.

McClenagan believes that 100 mummified, small "gazelle-camels" (Figure 4), found 3 km east of the two hills, were buried in post-Flood "loess" in the Lower Harrison Formation. The fact that these animals are found together and articulated would favor a post-Flood paleoenvironment. One problem is that the animals are considered as deposited within the lower Harrison Formation, deeper into the Ogallala Group that McClenagan (2022, p. 6) believes is from the Flood: "One of the last continental-scale sedimentary units laid down by the Flood in North America is called the Ogallala Formation." Besides, these animals are never found within Ice Age sediments (see below).

Features That Support a Flood Interpretation

But it is best to examine all the features not only from this location, but as many features as possible in the surrounding area of the central and southern High Plains of the United States. When I applied multiple criteria (Oard, 2014), I believe the evidence better favors a Flood explanation.

The strongest evidence for this is the channels with the fossils seem more likely part of the Ogallala Group, composed of sand, cobbles and boulders, ash layers, and a "caliche" cap that varies in thickness from 1 to 245 m. Such cut-and-fill channels and their sediments are *common* and considered part of Ogallala Group (Diffendal, 1982). The fossils in Agate Fossil Beds National Monument

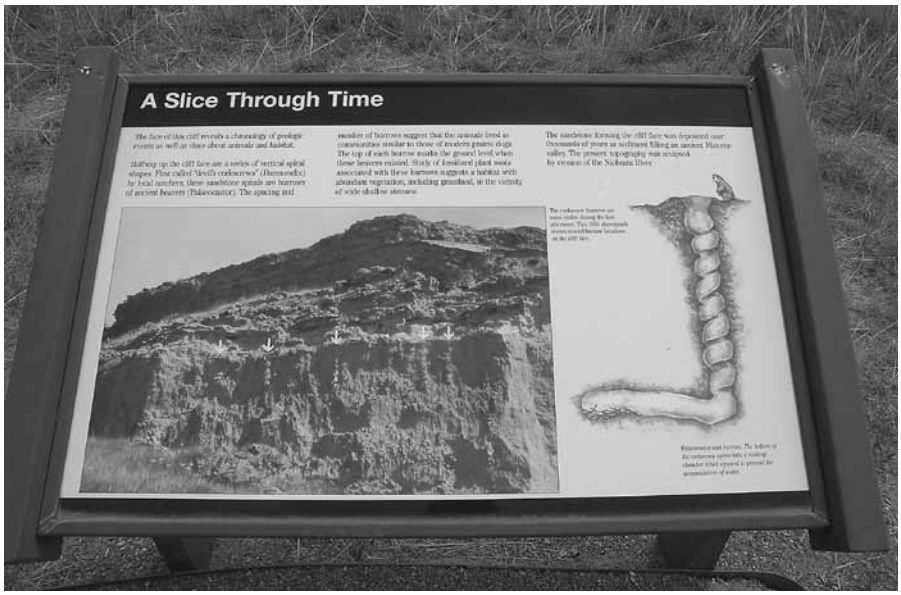

Figure 2. Kiosk showing four spiral beaver burrows (left) and the interpretation (right) from Agate Fossil Beds National Monument.

Table I. Features that support a post-Flood paleoenvironment at Agate Fossil Beds National Monument.

Unpermineralized bones
Mammal tracks
The Devil's Corkscrews
Articulated, mummified gazelle camels that are buried together in "loess"
Bones little broken and abraded
Massive number of bones in lenses at the bottom of channels

1 The Ogallala is given group status in Nebraska and South Dakota and divided into three formations. However, many geologists believe one cannot subdivide the Ogallala because it is a heterogenous formation. Since the focus is sites in Nebraska, I will refer to it as a group.

are found near the bottom of the two hills (Figure 5) and are covered with sediments that fill the channels.

The dimensions of the Ogallala Group point to it very likely being deposited in the Flood. The present area of the Ogallala Group is huge, around 768,000 km^2 (Frye et al., 1956), but it has been heavily eroded from an inferred maximum area of around 1.5 million km^2 (Figure 6) (Heller et al., 2003).

Since the bones are all jumbled together, the Agate fossil beds better represent the erosion, reworking, and re-deposition forming a large bonebed within Ogallala Group. The fossils must have been originally buried nearby, since the reworking and redeposition did not cause much bone breakage and abrasion. This is what would be expected with multiple cut-and-fill features (Heller et al., 2003, p. 1124). Moreover, the sediments are either well-lithified or unlithified.

Remnants of cobbles and boulders of the Ogallala gravel are found as far east as central Texas, generally on top of higher areas, such as on inter-stream divides (Byrd, 1969, 1971). This coarse gravel has been called the Uvalde gravel but is really an eastern extension of the Ogallala gravel. It is *not* associated with well-developed river terraces. The gravel near Uvalde is found 120 to 300 m above the Rio Grande River. It is about 23 m thick at one location. The fact the gravel is well above the river indicates significant channelized erosion happened *after* deposition over a wide area. Some of cobbles and boulders have been reworked into the river valleys and onto terraces. Based on the interfluve outcrops in central Texas, the Ogallala gravel has been transported about 800 km from its nearest source in central New Mexico. Byrd (1971, p. 7) stated that the origin of the Uvalde (Ogallala) gravel is a major uniformitarian problem:

> "A major problem of origin and history of the Uvalde gravels exists because there is no apparent direct

Figure 3. University and Carnegie Hills erosional remnants at Agate Fossil Beds National Monument (Urban, Wikipedia Commons PD US NPS).

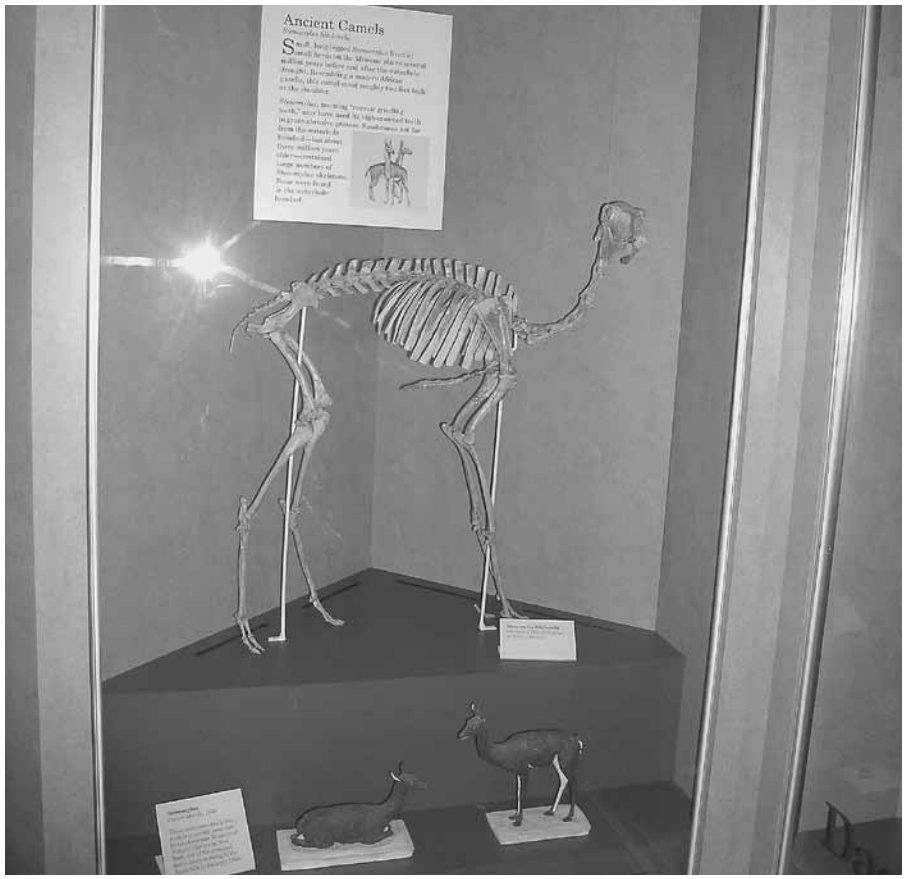

Figure 4. Skeleton of the "gazelle camel" at Agate Fossil Beds National Monument.

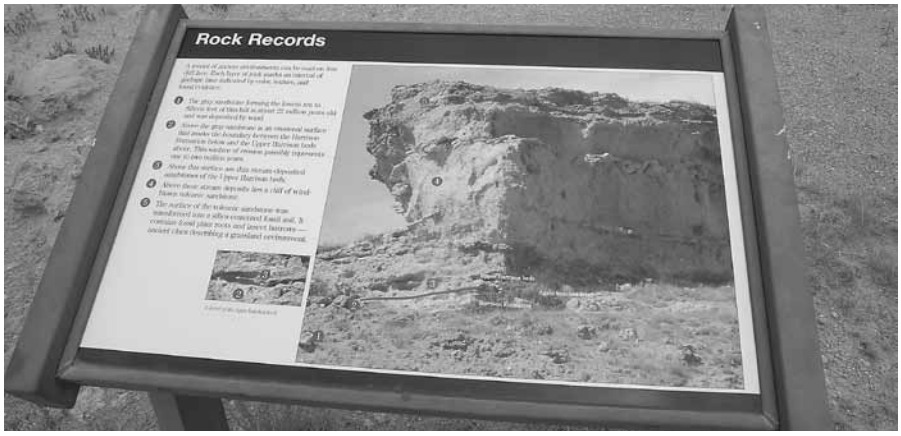

Figure 5. Kiosk showing that the fossils came from near the base of the hills with sandstone interpreted as wind-blown from Agate Fossil Beds National Monument.

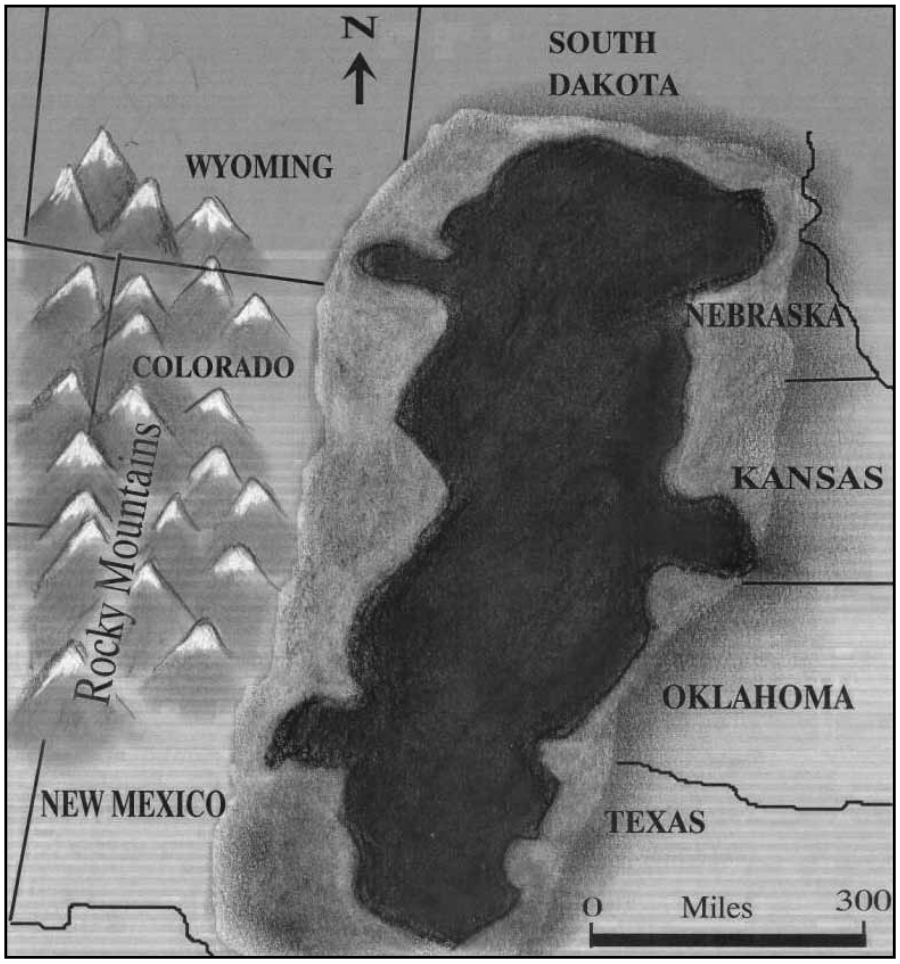

Figure 6. Distribution of the Ogallala Group on the central and southern High Plains of the United States (modified from Thornbury (1965) and Heller et al. (2003) by Melanie Richard). Map shows observed (black) and inferred (shaded) original distribution.

> connection between the Uvalde gravels and existing drainage in central Texas. Transportation of gravels of such large size is beyond the competence of existing rivers. No source for such coarse siliceous gravels exists in the major basins of present central Texas streams."

Moreover, the vast majority of the mammals are extinct and never associated with the Ice Age (see below). Many bonebeds occurred during the Flood, such as huge dinosaur bonebeds. It would seem that a bonebed of 9,000 mammals would be typical of the Flood and not a post-Flood signature. How would so many individuals end up being buried in a small area, and why would they show little breakage and abrasion? Each animal must die in the vicinity of the bonebed and be transported to the same exact same spot, which should take some time after the Flood in which case the bones should become weathered and abraded. And even more telling is that there are mainly three types of extinct mammals. Why wouldn't there be many other types of animals if the deposit represents burial in one or more post-Flood catastrophes?

The hills represent erosional remnants of massive High Plains erosion. At least two planation surfaces occur in the central and southern High Plains. One starts in southeast Wyoming and extends well out into Nebraska (McMillan et al., 2002). It is called the "gangplank." Another planation surface, mainly in northwest Texas is the Llano Estacado. These planation surfaces are on top of the Ogallala Group and is a signature of the Recessive Stage of the Flood (Walker, 1994).

The Devil's Corkscrews are found *within the walls* of the valley. McClenagan admits that the walls are part of the Ogallala Group, deposited in the Flood. Therefore, the Devil's Corkscrews were formed during the Flood and indicate live animals during deposition of the Ogallala Group. Table II summarized the

evidence for a Flood interpretation of the Agate Fossil Beds National Monument.

The Loess Question

I believe the loess is just a uniformitarian interpretation of a silt layer. Siltstone layers within the geological column are sometimes claimed to be loess, such as late Paleozoic loess from a supposed ice age in western North America (Soreghan et al., 2008). Ice Age loess is practically always found on top of the Ogallala Group and does not occur within it. The claim of Ogallala Group loess is similar to that made for many of the sandstones in the western U.S. that are claimed to have been deposited by wind. Whitmore et al. (2014) examined the classic "wind-blown" sand in the west, the Coconino Sandstone, and discovered that it is highly likely that the sand was deposited in water. The 100 gazelle-camels have their heads turned back in the "death pose," indicating suffocation, similar to many other Flood animals. How these mammals were mummified is unknown.

Ashfall Fossil Beds State Historical Park

There are several other areas of the central and southern High Plains that can add information. One of these is Ashfall Fossil Beds State Historical Park in northeast Nebraska. Two hundred species of mammals and a few reptiles and birds have been found. A graveyard of rhinos buried in volcanic ash is the main attraction of the site with a shelter built over them, called the Rhino Barn (Figure 7). The ash ranges from a few cm to 3.5 m thick and many of the animals are found within or just below the ash.

Evidence That Supports a Post-Flood Paleoenvironment

Several creationists concluded that the area is post-Flood (Akridge and Froede,

Table II. Features that support Flood deposition at Agate Fossil Beds National Monument.

Fossils within cut-and-fill sediments are part of the Ogallala Group
Ogallala Group is thin over a huge area
Fossils of 9,000 animals
Part of the Group is well lithified
Exotic hard rocks from the Rocky Mountains spread 100s of kilometers east
Vast majority of animals extinct and never associated with the Ice Age
Mainly three types of extinct mammals
The hills with the bones are erosional remnants left during valley channelized erosion
Two planation surfaces cap the Ogallala Group
The Devil's Corkscrews are from the walls of the valley and within the Ogallala Group

Figure 7. The Rhino Barn above a graveyard of rhinos buried in volcanic ash at Ashfall Fossil Beds State Historic Park.

Table III. Features that support a post-Flood paleoenvironment from Ashfall Fossil Beds Stage Historical Park.

A bonebed of mostly articulated rhino fossils at the Rhino Barn
Coprolites
Bite marks on bones
Minimal permineralization
Grass fossils associated with a rhino
Unborn and baby rhinos
Tracks
A few animals similar to today
Fossils well preserved
Hatchling turtle bones

2005, 2011; Akridge and Akridge, 2008), a reasonable conclusion based on what seems like obvious post-Flood indicators (Table III), such as mammal tracks, grass seed fossils associated with the bones (Figures 8 and 9), baby rhinos (Figure 10), and unborn baby rhinos (Figure 11).

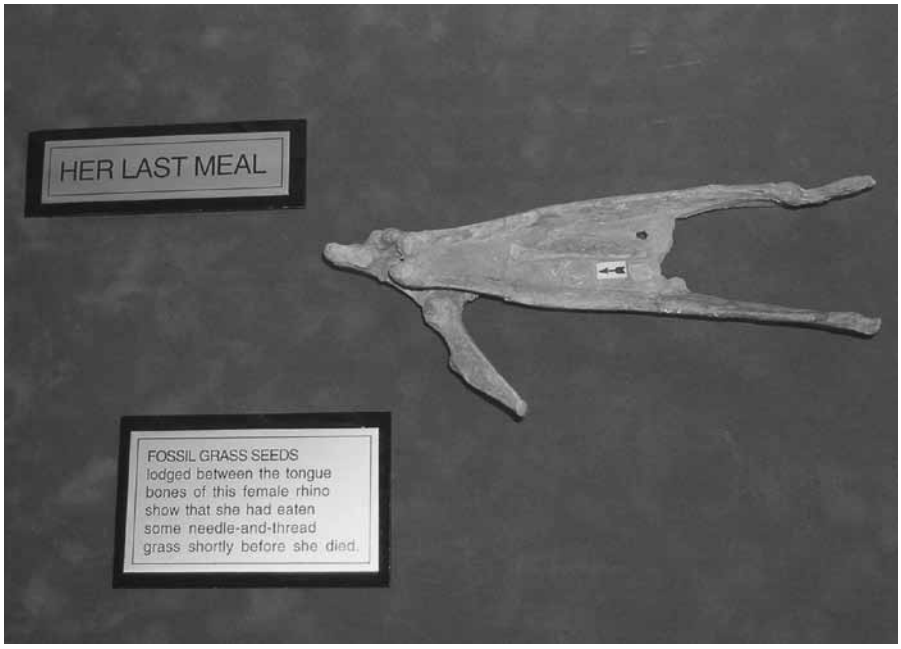

Figure 8. Grass seeds within the mouth fossils of a rhino at Ashfall Fossil Beds State Historic Park.

Features That Support a Flood Interpretation

Despite evidence for a post-Flood paleoenvironment, a number of features point to Flood deposition (Oard, 2009, 2011a). The most important is that the formations are part of the Ogallala Group that provides strong evidence it was laid down during the Flood (see above). McClenagan (2022) acknowledges that the Ashfall Fossil Beds State Historical Park are within the Ogallala Group, and hence from the Flood. This is opposite to the conclusion of Akridge and Froede (2005, 2011) and Akridge and Akridge (2008).

Although the volcanic ash is unlithified, the Ash Hollow Formation that contains the ash is a well-lithified sandstone. To lithify sand, hundreds of meters of overburden are required (Oard and Klevberg, in press), and in this case the overburden was eroded and the fossils exposed at the surface. This is a predictable pattern in the Genesis Flood.

Moreover, the Ogallala Group, including the Ash Hollow Formation, contain exotic cobbles from the Rocky Mountains with percussion marks (Helland and Diffendal, 1993). These exotic rocks are found associated with the fossils. Percussion marks (Figure 12) are indicative of torrential flow of water and are not forming today on hard rocks (Oard, 2013). Such long-distance transport of resistant rocks with percussion marks is a Flood signature (Oard, and Klevberg, 1998).

Warm-climate organisms, such as crocodiles (Voorhies, 1971), alligators, and large tortoises are also found, indicating a climate unlike that of Nebraska either during the Ice Age or at present (Figure 13). Thomasson (2005, p. 193) tells us the significance of the large tortoise fossils: "This fauna is consistent with a grasslands paleoenvironment,

and the presence of the tortoise suggests moderate temperatures that rarely, if ever, fell below 32 degrees F." The volcanic ash bed, and other abundant ashes within the Ogallala Group would have caused a volcanic winter (Oard, 2019). Therefore, warm-climate fossils should be absent, especially in this continental interior location. Moreover, many of the fossil organisms are unusual and never associated with the Ice Age (see below).

Petrified wood is also found (Figure 14). In order to petrify wood, silicon dioxide must be absorbed into the wood before it rots. This process makes sense during rapid Flood deposition, but not after the Flood (Oard and Klevberg, 2022). Table IV summarizes these Flood indicators.

Other Locations

I have examined other locations of the central and southern High Plains. One of these locations is the classic mammal fossil area of southwest Kansas, where the Lava Creek B ash layer, assumed from the last Yellowstone super-eruption, is found. I earlier discovered this ash within the pediment capping gravel in the Upper Wind River Basin, southeast of Yellowstone. Since pediments are typical of rapid, channelized Flood runoff within a valley (Oard, 2014b), the Lava Creek B ash was deposited late in the Flood, which also means that all the previous Yellowstone super-eruptions also occurred late in the Flood. This deduction is reinforced by the features in and around Yellowstone National Park, Wyoming, USA. The Ice Age started right after the Flood in the high elevations of Yellowstone, and the ice eventually accumulated to about 1,000 m above the valleys (Licciardi and Pierce, 2018). If any of the super-eruptions occurred during the Ice Age, the heat would have melted much ice and caused massive megafloods and debris flows down the adjacent valleys during the Ice Age, which is absent.

Figure 9. Grass seeds with the body of a rhino at Ashfall Fossil Beds State Historic Park.

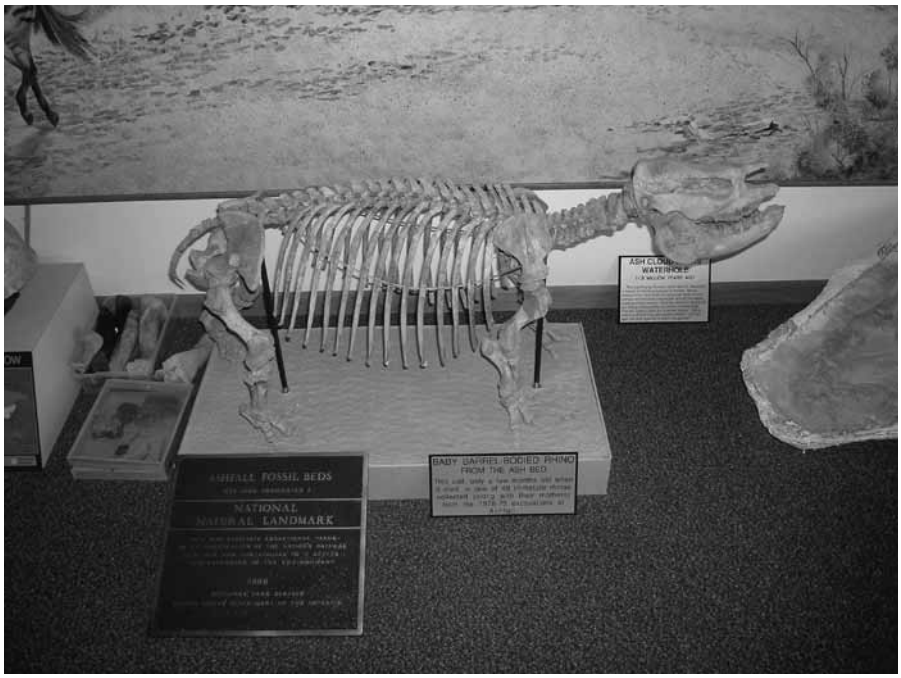

Figure 10. A baby rhino at Ashfall Fossil Beds State Historic Park.

Figure 11. An unborn baby rhino at Ashfall Fossil Beds State Historic Park.

Figure 12. Percussion marks on a rock from the Rocky Mountains in Toadstool Geologic Park, extreme northwest Nebraska.

Based on the location of the Lava Creek B ash in southwest Kansas, I determined that numerous mammal fossils from that area are from the Flood (Oard, 2014a). Since this ash is dated at 650,000 years, the Flood/post-Flood boundary in southwest Kansas was determined to be in the mid Pleistocene. Pleistocene sediments do not automatically mean Ice Age sediments, since many Pleistocene sediments have nothing to do with the Ice Age. Some basins have over 1000 m of Pleistocene sediments. For instance, Pleistocene sediments are 3000 m thick in the 400-km diameter South Caspian Basin (Richardson et al., 2011). Southwest Kansas was never glaciated, but Hibbard (1944) correlated the mammals to the lower portion of the four-ice-age scheme farther northeast, although there is no physical connection of the area to the Ice Age. The four-ice-age scheme is obsolete and has been superseded by about 50 ice ages of variable intensities that repeat at regular intervals according to the astronomical theory of the ice ages (Walker and Lowe, 2007).

The ash also occurs at Gilliland, north central Texas above mammal fossils (Hibbard and Dalquest, 1967) that would be from the Flood. This of course assumes that the ash can be correlated to the Lava Creek B Yellowstone super-eruption.

Mammal fossils, likely from the eroded walls of Blanco Canyon, about 50 km east of Lubbock, Texas, are likely from the Flood (Oard, 2014a), but some of the animals could have died in the valley during the Ice Age. Blanco Canyon is another canyon, south of Cita Canyon, that is also cut in the Llano Estacado planation surface on top of the Ogallala Group.

Most of the Fossils Point to a Flood Paleoenvironment

The fossil locations have animals of types never associated with Ice Age deposits or from the present. The fossils include oreodonts, four-tusked elephants, three-toed horses, rhinoceroses, bear dogs, chalicotheres, huge pigs, horned rodents, gazelle-sized "camels" 60 cm tall, giraffe-like camels, 4-horned pronghorn, saber-toothed deer, etc. McClenagan reports fossils from Cita Canyon from a

zebra-like horse and a 3-toed horse that are not known today or from the Ice Age in North America.

Some of the animals from Cita Canyon could be from the Ice Age or present environments, such as the deer, pronghorn, peccary (pig), giant ground sloth, giant armadillo (glyptodont?), saber-toothed cat, short-faced bear, raccoon, rabbit, badger, lynx, giant land tortoise, turkey, and ibis. Assuming the wall strata is from the Flood, being part of the Ogallala Group, it is difficult to tell whether some of the animals are Flood or post-Flood. It likely depends upon whether the fossils are or were part of the wall strata that was eroded into the canyon, or died during or since the Ice Age within the canyon. McClenagan (2022, p. 11) recognized this distinction: "It is important to distinguish between fossils located in situ in the Ogallala beds and fossils located in a basin carved into the Ogallala." Of course, if the fossils were eroded from the Ogallala beds and lying in the basin, it would be difficult to tell whether they are from the Flood or post-Flood. More research is required for Cita Canyon.

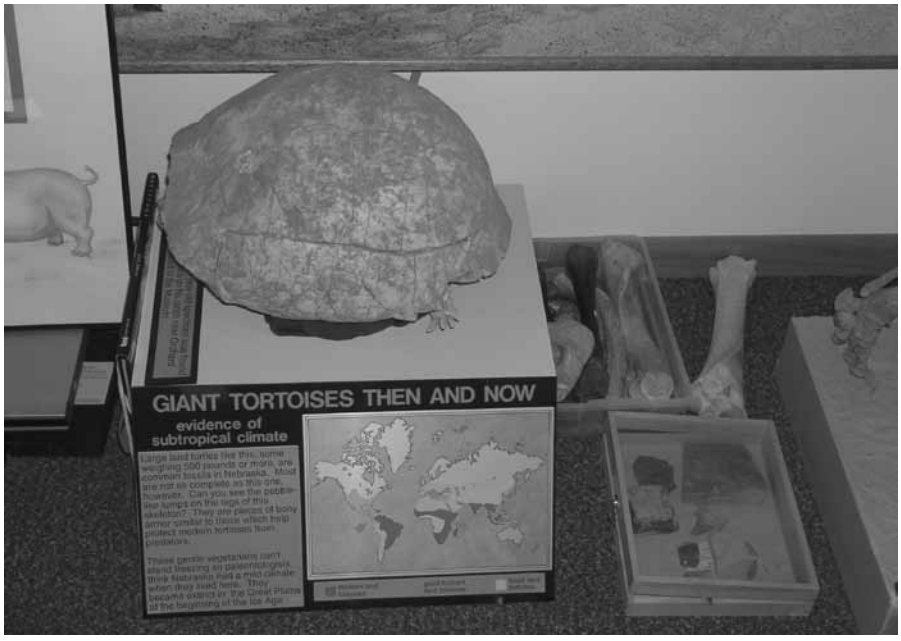

Figure 13. Giant tortoise fossil with its current range in the tropics and subtropics at Ashfall Fossil Beds State Historic Park.

What Should Millions of Mammals Buried in the High Plains Strata Tell Us?

A more basic question should be asked. The fossil locations in valleys and canyons carved into the Ogallala Group are widely scattered and highly fossiliferous. Therefore, it can be assumed that the vast areas in between are also highly fossiliferous. Thomasson (2005) reinforces this deduction by writing that the Ogallala sediments contain numerous vertebrate fossils. We can conclude that many millions of mammals are buried in the top strata of the central and southern High Plains.

If the animals were buried in the Ogallala Group, advocates of the post-Flood position need to believe the following: (1) the animals multiplied and

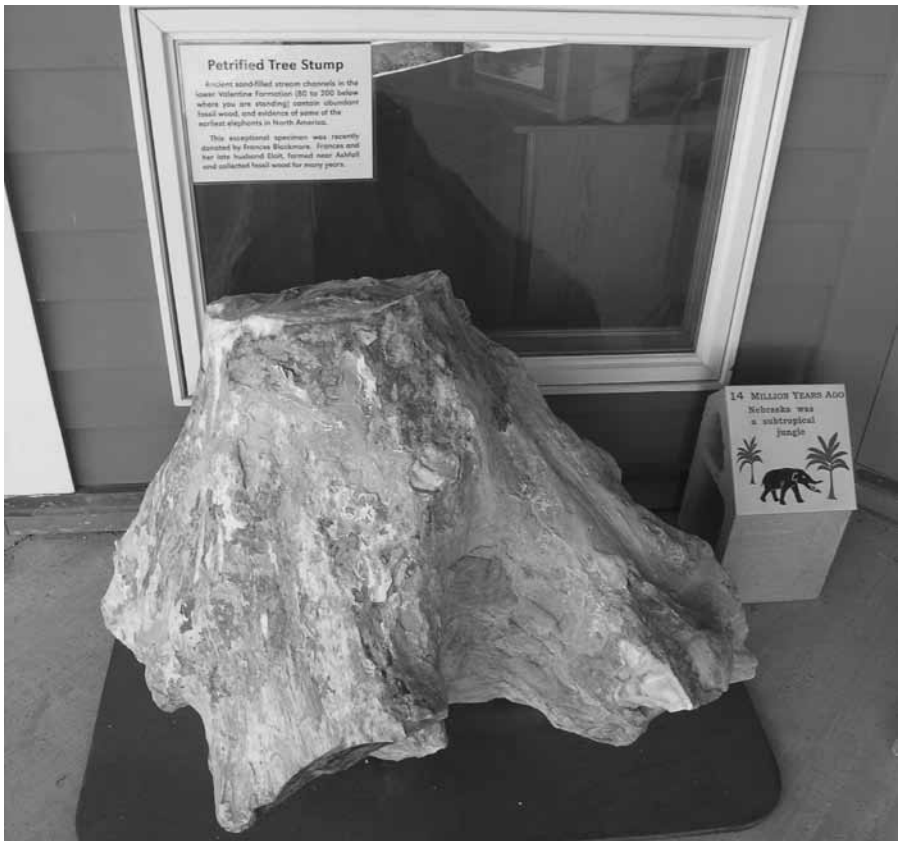

Figure 14. Petrified wood from Ashfall Fossil Beds State Historic Park.

Table IV. Features that support Flood deposition from Ashfall Fossil Beds Stage Historical Park.

Formations part of the widespread, thin Ogallala Group in the Midwest
Ash Hollow Formation with unlithified ash is a well-lithified sandstone
Exotic hard cobbles from the Rocky Mountains spread 100s of kilometers east
Percussion marks on some rocks
Warm-climate organisms, such as crocodiles, alligators, and giant tortoises
Petrified wood
The many ash beds of the Ogallala Group would support "volcanic winter"
Many unusual animals, not associated with the Ice Age

spread from the "Mountains of Ararat," (2) they had to round the Bering Land Bridge between Siberia and Alaska and spread south-southeast down the ice-free corridor during the Ice Age, (3) the population mushroomed probably into tens of millions, (4) some post-Flood catastrophe buried many millions of mammals and laid them down in a thin layer over an enormous area with power to carry boulders 800 km, (5) hundreds of meters of erosion subsequently occurred in the area, and (6) the eroded sediments are not found anywhere nearby.

How Are the Seeming Post-Flood Features Explained?

If most of these mammals and associated features are from the Flood, how is all of the evidence of a post-Flood environment to be explained? The BEDS Model can account for the millions of dinosaur tracks, millions of dinosaur eggs, and scavenged bonebeds early in the Flood (Oard, 2011b). BEDS stands for Briefly Exposed Diluvial Sediments in which a local fall in the level of the Floodwater results in the exposure of a bedding plane. Then a local rise in the Floodwaters buries tracks, eggs, dead animals, and trace fossils that are on the bedding plane, preserving them in the rock record. I believe that the evidence for live mammals on the central and southern High Plains can also be explained by the BEDS model. On a briefly exposed bed or beds, mammals can embark, make tracks, herd up, and die together when the Floodwater rose and covered the area. Most of the features of Tables I and III can be explain by the BEDS model, but the lack of permineralization of the bones and the grass seeds are difficult to explain. Permineralization is one of the criteria for a Flood paleoenvironment (Oard, 2014c). However, it is not an absolute criterion, as some dinosaurs from the Flood are not permineralized.

The Grass Seeds Could Be from the Sediments

Grass seeds have been found inside a rhino skeleton and mouth (Figures 8 and 9). I had earlier thought that grass could have grown in a short time on BEDS in a warm, humid climate, but grass seeds would take a fair amount of time to germinate, grow, and then produce seeds. An alternative explanation of the grass seeds associated with the rhino is that they ended up associated with the rhino by chance, since the Ogallala Group has numerous seed fossils:

> "The abundant fossil seeds (Elias, 1942), however, are far more significant to the field stratigrapher and are to be found in virtually any good exposure of the Ogallala formation in northern Kansas.… It is rare indeed that an exposure of Ogallala rocks does not reveal at least one kind of fossil seed." (Frye et al., 1956, pp. 7, 38)

Thomasson (2005, p. 185) reinforces this conclusion: "This is especially true of the grasses, which are very abundant in the Tertiary fossil record of the Great Plains."

The grass seeds and grazing vertebrate in the Ogallala Group were transported to where we find them in the Ogallala Group today. Then where did they originate and why were so many animals and paleoenvironmental indicators found together? It is likely that organisms were buried in the Flood by paleoenvironments, not only by vertical ecological zones, but also by *horizonal ecological zones*. Terrestrial organisms from different paleoenvironments were overwhelmed, transported, and buried together in the Flood. In the case of the Ogallala Group, the paleoenvironment was from a pre-Flood grass paleoenvironment with its grazers, and even some browsers.

The Question of Where to Place the Ogallala Group Within the Flood

A major question is where to place all the evidence for live animals within the Flood. Creation scientists, includ-

ing myself (Oard, 2013; Clarey, 2018), have written that the Ogallala Group is from the Recessive Stage of the Flood. Then how can all this evidence for live mammals be explained late in the Flood when Genesis 7:21–23 would imply that all animals that breathed air and lived on land died by the peak of the Flood?

Conclusion

The mammals and other animals entombed in the sediment layers at the top of the central and southern High Plains show some features that seem to come from a post-Flood paleoenvironment. However, a closer look at these locations provides other evidence that the fossils were buried in the Flood, mainly because they are likely entombed within the Ogallala Group that contains many millions of vertebrate fossils. This sediment is thin and widespread with exotic rocks, some with percussion marks, spread hundreds of kilometers east from the Rocky Mountains. Some of the sediment is lithified, and most of the fossils are of extinct types never found in the Ice Age. Furthermore, some fossils indicate a warm paleoenvironment, unlike those from the Ice Age.

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