

on the evidence.<sup>6</sup> However, we can say that these fossils are consistent with rapid burial during the biblical Flood.

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## Two more late Ice Age megafloods discovered

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It took 40 years for mainstream geologists to accept the Lake Missoula flood, despite hundreds of pieces of obvious evidence.<sup>1</sup> The acceptance forced many geologists to shift from strict uniformitarianism (the reason they rejected the Lake Missoula flood in the first place) to believing in neo-catastrophism—the idea that the earth in rare instances does have huge catastrophes. The meteorite impact hypotheses for the extinction of the dinosaurs<sup>2</sup> and Ager's discovery that some sedimentary units were quickly laid down over hundreds of kilometers<sup>3</sup> has reinforced the trend towards neo-catastrophism among mainstream geologists.

### Numerous Ice Age megafloods

It is interesting that once the Lake Missoula flood was accepted in the 1960s, numerous other Ice Age megafloods have come to light. Geologists could not comprehend or see any evidence for these megafloods before the possibility entered their minds. Similar to the effect of the Ice Age megaflood controversy, I believe the worldview of mainstream scientists keeps them from seeing the copious evidence for the Genesis Flood in the rocks and fossils.

Some of the megafloods discovered include the Bonneville flood down the Snake River of southern Idaho and southeast Washington, caused by pluvial Lake Bonneville overspilling a low point in southeast Idaho with the top of the lake dropping over 100 m.<sup>4</sup> A dammed glacial lake burst in the Altai Mountains of south central Siberia sending a huge flood on the scale of the Lake Missoula flood down the Chuja and Katun Rivers.<sup>5</sup> The floor of the eastern English Channel is now believed to have been carved by the catastrophic drainage of a huge lake in the area of the southern

North Sea<sup>6</sup> (figure 1). Two megafloods have been postulated,<sup>7</sup> but, regardless, the flood/s probably severed England from mainline Europe.

Numerous Ice Age megafloods from glacial Lake Agassiz in central Canada have been claimed.<sup>8</sup> These floods are believed to have flooded south down the Mississippi River, east through the Great Lakes and Saint Lawrence Seaway, north into Hudson Bay and out into the North Atlantic, and northwest down the Mackenzie River and into the Arctic Ocean.

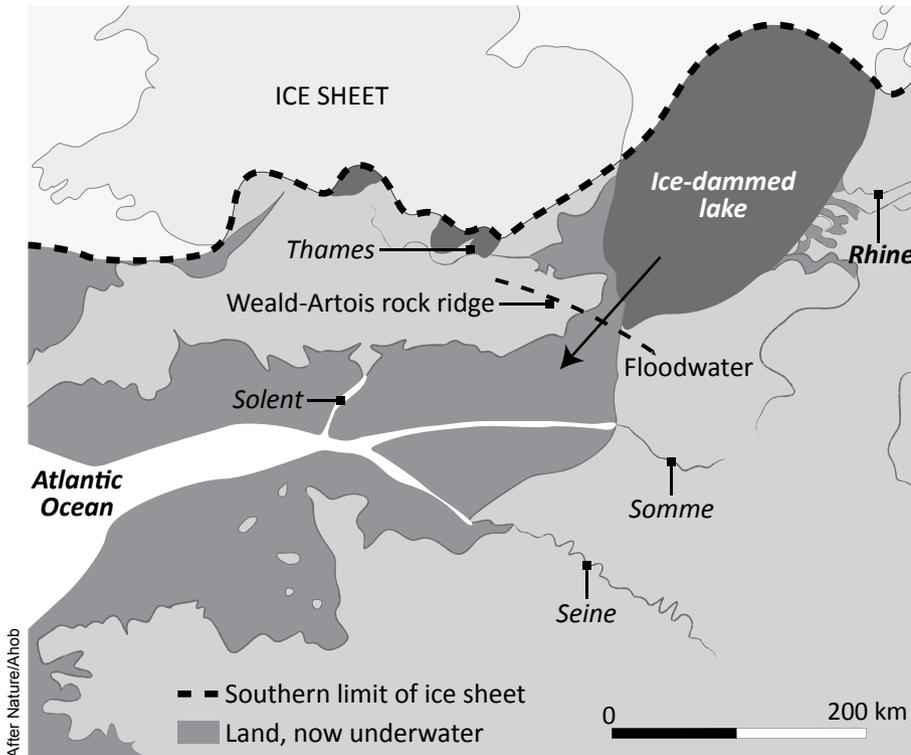
Glacial Lake Wisconsin was formed along the edge of the Green Bay Lobe of the Laurentide Ice Sheet. As the ice receded, the lake breached catastrophically and flowed down the Wisconsin River.<sup>9</sup> This flood overtopped another ridge, creating what is now a water gap. Many water gaps were also formed during the Lake Missoula flood. Both of these floods provide analogs for the thousands of water gaps across the Earth caused by the channelized runoff of the Genesis Flood.<sup>10</sup>

These are only the well-established Ice Age megafloods. There is also the category of superfloods, around an order of magnitude larger, that supposedly flowed under the ice sheets and out the edge. The study of these superfloods has been pioneered by John Shaw of the University of Alberta in Edmonton, Alberta, Canada. Shaw has published numerous papers linking unique landforms to subglacial floods.<sup>11</sup> Superfloods issuing from under the ice are also postulated for southwestern Russia and Antarctica. Subglacial superfloods are not popular with the majority of scientists, but the evidence for them seems substantial.<sup>12</sup>

### Two new megafloods

Recently, at least two new megafloods have been added to the list. The first is actually an old one, but is now considered much larger based on new evidence. This is an outburst megaflood from glacial Lake Agassiz that swept northwest into the Mackenzie River and out into the Arctic Ocean.<sup>13</sup>

The second megaflood is one of several postulated to have spilled out



**Figure 1.** Scientists suggest an ice dammed lake behind a narrow isthmus linking Britain to continental Europe burst through the ridge, carving the English Channel in a spectacular fashion.

of the intermontane Cooper River Basin of south central Alaska. As the Alaska Range ice cap in southern Alaska melted, a huge lake, called Lake Atna, was trapped in the Cooper River Basin and overtopped several outlets. One outlet passed westward down the Matanuska Valley through Wasilla and into Cook Inlet.<sup>14</sup> The amount of water released is estimated to have been 500–1,400 km<sup>3</sup>, with a depth over the Wasilla area of 34–70 m, and a flow velocity estimated between 13–57 m/sec. The evidence for the flow of water can be seen from space in a series of long north-south mega-ripple marks.

### Did the megaflood down the Mackenzie River cause the Younger Dryas?

The megaflood into the Arctic Ocean from glacial Lake Agassiz (figure 2) is claimed to have caused the Younger Dryas, a cold snap that occurred during deglaciation, when temperatures were warming. The claimed temperature drop of around 10°C, based on oxygen isotope data,

occurred mainly in the Northern Hemisphere.

The Younger Dryas has been detected in many climatic records, such as ice cores.<sup>15</sup> Although these ice core records have been dated using uniformitarian assumptions, in particular that annual layers can be counted to near the bottom of Greenland ice cores, the Younger Dryas is still represented by a large negative deviation in the oxygen isotope ratio during the time when the oxygen isotopes are strongly increasing during deglaciation.

The major suggestion for how such a megaflood pulse cools the atmosphere is that freshwater floating over denser saltwater stops the North Atlantic thermohaline circulation.<sup>16</sup> The thermohaline circulation is part of the large-scale ocean circulation, or meridional overturning of the ocean water, that is driven by ocean density gradients, caused by differences in temperature and salt content. Such a freshwater pulse would result in much more sea ice that would reflect more sunlight back to space and stop

evaporation from the capped ocean, thus cooling the atmosphere, especially in the Northern Hemisphere.

However, the origin of the Younger Dryas is still much debated.<sup>17</sup> It has been assumed that the pulse of freshwater had to have entered the North Atlantic Ocean by e.g. the St. Lawrence Seaway, but the traces of such a megaflood flowing directly into the North Atlantic have been hard to find.<sup>18</sup> So, some researchers think that a pulse into the Arctic Ocean could have made it to the North Atlantic Ocean.<sup>19</sup> That is why some researchers are excited about the enhanced megaflood from glacial Lake Agassiz into the Arctic Ocean. But how does the pulse affect the North Atlantic?

There are several problems with the Younger Dryas originating from the freshening of the Arctic Ocean. First, the freshwater pulse may become so diluted moving from the Arctic Ocean into the North Atlantic as to be of no consequence for the thermohaline circulation.

Second, it is assumed that a pulse of freshwater from a megaflood would have floated on the denser seawater and under the sea ice. But the megaflood meltwater pulse would also have been very muddy and possibly dense enough to sink to intermediate depths or to the ocean bottom. In the latter case, the meltwater pulse would have become a turbidity current and dissipated in the deep Arctic Ocean.

The idea of a freshwater pulse capping the North Atlantic Ocean and stopping the North Atlantic thermohaline circulation, although widely believed,<sup>20</sup> is still controversial.<sup>21</sup> Researchers are finding out that the ocean circulation is driven more by ocean current eddies and wind and not so much by density differences:

“The wind and its spatial structures are drivers of the entire top-to-bottom [ocean] circulation, including that part which many authors regard as buoyancy driven. Oceanic response to wind-driving is generally extremely fast and efficient.”<sup>22</sup>

Therefore, a pulse of freshwater flowing out into the North Atlantic,



**Figure 2.** A mega-flood, caused by the melting of the Laurentide ice sheet, which covered much of North America, emptied ancient Lake Agassiz sending floodwaters into Hudson Bay, Lake Superior and across North America.

either directly through the St Lawrence Seaway or indirectly through the Arctic Ocean, likely would not stop the thermohaline circulation. Besides, one megaflood, even into the North Atlantic, likely would not be significant enough to stop the circulation because of the large size of the North Atlantic Ocean.

### Creationist Ice Age implication

All these megafloods reinforce the idea that the Ice Age ice sheets melted catastrophically.<sup>23</sup> Furthermore, the creationist Ice Age model has the potential to cause the Younger Dryas cold snap because there was very little sea ice, even in the Arctic Ocean, late in the Ice Age. (It is difficult to freeze the top of seawater, but a less dense cap of freshwater makes it much easier.) So pulses of freshwater floating over the saltwater from many megafloods and the catastrophic melting of the ice in general could have triggered the Younger Dryas.<sup>24</sup> The effect would have been most dramatic over the Arctic Ocean. Of course, the Younger Dryas in the creationists scheme did not last on the order of a thousand years, as assumed by uniformitarian scientists, but would have been on the order of tens of years.

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