Ettinger Journals

Historical Record of Sea-Level Fluctuations for the Past 20,000 Years

Addressing the Missing Evidence of a Great Global Flood in the Record of Deep Seabed Cores

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Preface

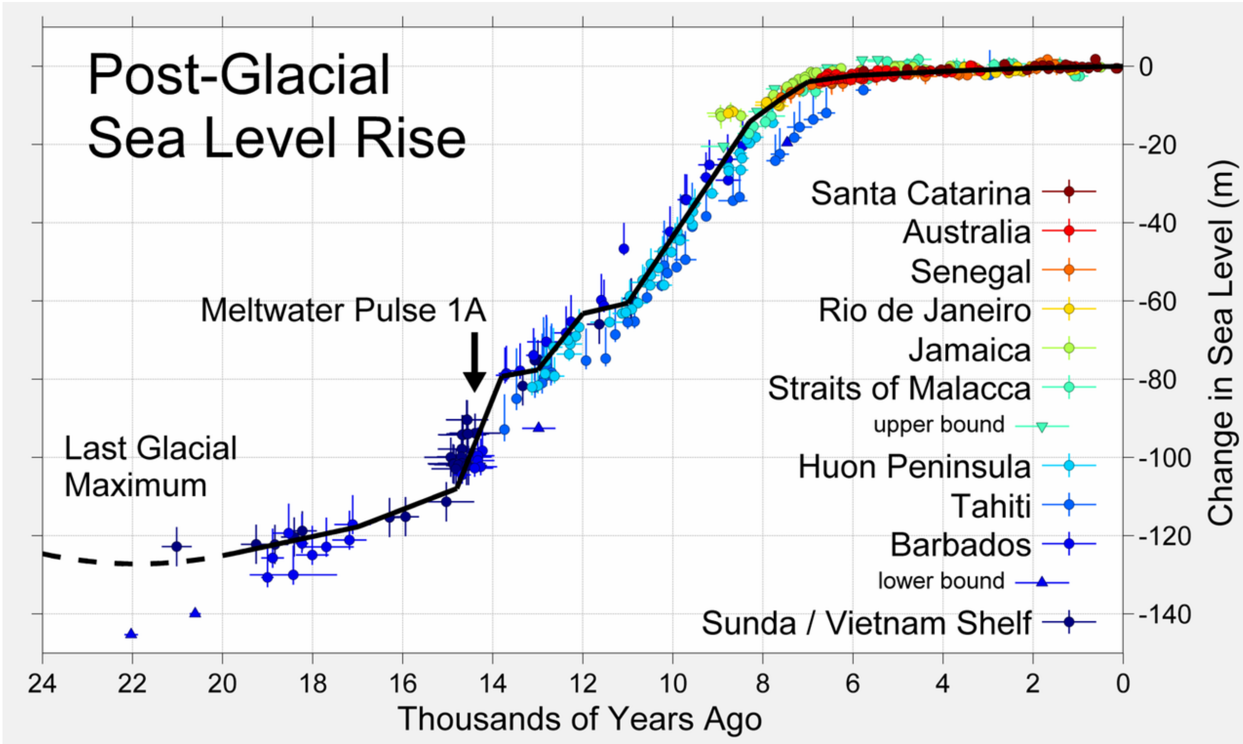
As an author of the book *The Great Deluge: Fact or Fiction?* I was treated to a professional review by an oceanographer. My proposal of a Noahiam global flood occurring 11,500 years ago during the Younger Dryas geological period was challenged primarily based on the historical record of sea-level fluctuations recorded in deep seabed cores. This oceanographer personally performed research on some of these seabed cores off the coast of northwestern United States. He presented a chart of the Post-Glacial Sea Level Rise since the Last Glacial Maximum occurring over 20,000 years ago. No record of the ocean rising above present sea level is indicated; only a steady rise with some pulses is shown until about 8,000 years ago when ocean levels became almost constant.

These convincing records were obtained from various worldwide locations. I had to dive more deeply, metaphorically, into oceanography and determine why the evidence for a global flood was missing. Hence, my research revealed what happened in the subsequent article. The oceanographer did not seriously question my results; he was a more detailed researcher still relying on academic tenure and funding and did not want to jeopardize his reputation by becoming involved in my so-called 'fringe' science. He wished not to extend his reach too far from his narrow expertise.

I thanked him for his cursory review and advice. He suggested trying to contact researchers in Scotland that were analyzing digs of a past flood that occurred about 6,000 years ago due to a tsunami. Perhaps this combination of geologists and anthropologists in Great Britain could be convinced to dig more deeply at the same sites and look for evidence of my proposed flood of 11,500 years ago.

Where is the missing evidence of a great global flood in the historical record of sea-level fluctuations recorded in deep seabed cores?

The basic model for sea-level fluctuation since the Last Glacial Maximum 20,000 years ago is the relentless but varied melting rate of the Laurentide Ice Sheet in North America. Some other smaller northern hemispheric ice sheets are also involved. The record shows sea level rising from minus 395 feet to its present level showing a few meltwater surges and an interesting lull period during the Younger Dryas Period. What the record cannot reveal are the answers to why the Laurentide Ice Sheet existed and why it disappeared never to return.



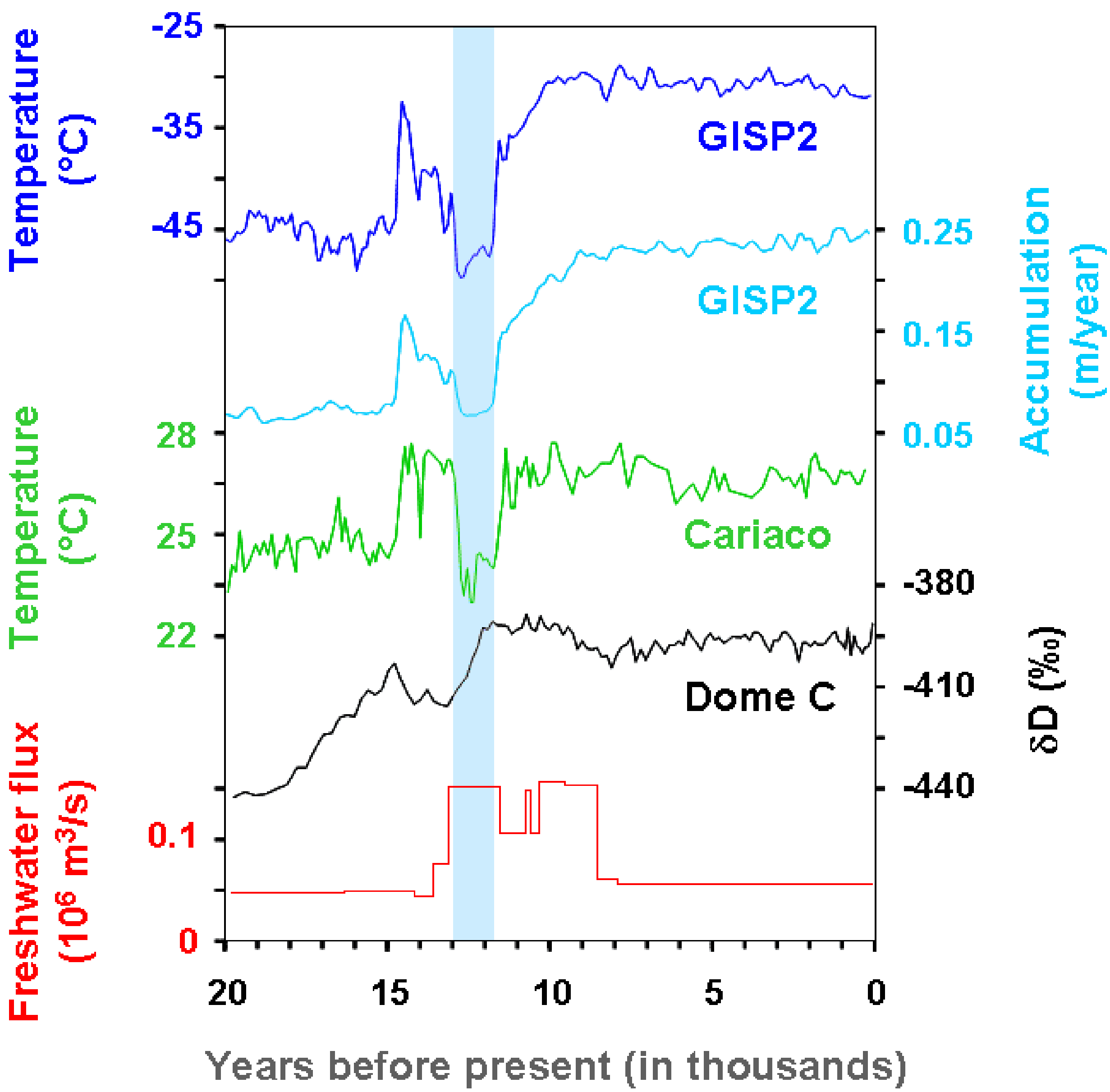
Sea Level Fluctuations After 20,000 Year Ago
Post-Glacial Sea Level Rise

So how is the record of a sudden global flood indicated? It does not show in the data taken from deep-seabed cores. The evidence is explained with other planetary forensics, especially the anomalies recorded during the Younger Dryas period. First, we must understand the model of this flood that is written about or orally explained in more than 100 cultural traditions throughout the world. The features of this flood follow:

1. This flood came from the massive production of state-size icebergs from ice sheet surges of East Antarctica.
2. The flood was sudden, similar to dropping ice cubes into a glass of water.
3. A meltwater surge and freshwater flux came from the southern hemisphere and was added to the already accelerated melting of northern ice sheets.
4. The quickly rising sea level came principally from the quantity of ice in the East Antarctic Ice Sheet (EAIS).
5. The flood receded during a period of 200 to 500 years due to accelerating evaporative and condensation processes returning the water inventory to the Antarctica landmass.
6. The EAIS is proposed to be thicker by about 20% and had a deep slush layer due to the unique phase change of water at a certain pressure and temperature combination.
7. The ice below the slush layer remained on land, making the evidence of silt, sand, gravel, and drop rocks very minimal.
8. Thermohaline currents moving between the two hemispheres delayed the freshwater flux.
9. This hypothesis requires basic starting assumptions:
    a. The EAIS was thick enough to produce a consistent deep-ice slush layer.

b. A crustal/mantle shift of 23 to 25 degrees moved the south pole from the Southern Sea off the coast of East Antarctica to the central region of the Antarctica continent.
c. Due to geodetic, vertical alignment changes, the landmass sank into the rising seas from the melting of the Laurentide ice sheet, thereby lifting and releasing the EAIS above a slush layer into the ocean.
d. The dynamic forces of the crustal/mantle shift aided in moving the EAIS horizontally eastward toward Australia.

The Younger Dryas anomalous data provides physical evidence for this flood scenario. Ice coring data sets from ice sheets in Greenland, Antarctica, and Venezuela corroborate each other.



Younger Dryas Anomalies

What are the reasons for an abrupt cooling off 12,800 years BP and an abrupt warming 11,500 years BP – a span of 1300 years – that mark the boundaries of the Younger Dryas? Please note the out-of-phase warming of Antarctica (Dome C core data) with the data from the northern hemisphere. The deuterium isotope provides a proxy for a warming trend in Antarctica occurring during the Younger Dryas (YD) cold period. The reason is forthcoming. Here are the interpretations of this enlightening chart.

1. A warming trend occurred before the YD because an extremely high dose of solar-wind radiation originating from a visitor to the inner solar system by the brown dwarf star, called Nemesis, heated the polar region. These periods are known as the Bolling and Allerod interstadials. This radiation exposure accelerated the melting of the northern polar ice sheets, as is reflected by a measured first freshwater flux (13,500 to 11,700 years BP).
2. The abrupt cooling marking the beginning of the YD indicates the crustal/mantle shift 23 degrees of latitude that moved the Laurentide Ice Sheet into a more temperate zone and changed the Earth's geoid and surface elevations. This geoid change created a very dusty, wet atmosphere because of increased volcanism and violent storms, which promptly cooled the Earth's surface in both hemispheres attested by the data from the Cariaco Ice Sheet given on the above chart.
3. The same crustal/mantle shift occurring only in a fraction of a day caused the sinking and liberating of the East Antarctica Ice Sheet into the ocean with subsequent sudden global flooding that followed shortly after the calamities mentioned in paragraph two.
4. The continued cooling period of YD shown as lasting from 500 to 1,300 years represents the long recovery period of continued volcanism and releases of supercritical steam from mid-oceanic rifts; the atmosphere becomes saturated with dust and aerosols, shielding the Sun's radiation, and the ocean recedes by the build-up of new snow and ice forming on Antarctica and the establishment of perma-frost in Siberia that was previously grasslands. The depressed ^{14}C /^{12}C calibration curve possibly caused errors by 500 or more years. Please consult the author's book about the accuracy of radiocarbon dating during these calamitous times and the suspected flattening of the radiocarbon calibration curve.
5. The abrupt warming and end of the YD reflect the ending of mega-volcanoes, the return of quiet weather patterns, normal solar radiation reaching the surface of the Earth with the clearing of the atmosphere, evaporation and condensation processes achieving normal conditions at the poles, and normal thermohaline currents returning to create a better distribution of global temperatures. Removal of all the catastrophic forcing functions happened almost simultaneously, showing this YD glacial period to end abruptly.
6. The Laurentide and other northern ice sheets continue to melt because their locations are now shifted from arctic to a temperate zone during the crustal/mantle shift. The global water inventory transfers from the post-deluge ocean returning it to the EAIS and also to permafrost in Siberia and Alaska and the new West Antarctica Ice Sheet (WAIS). The ocean level becomes roughly the same as before the Deluge during the attainment of equilibrium of ice sheets and liquid ocean. Then the Laurentide ice sheet continues to melt, raising the ocean levels to almost present levels about 8,200 years ago. The end of the North American ice sheets represents for most oceanographers the beginning of the present nearly constant sea level. However, these scientists are puzzled why the Laurentide disappeared, never to return. A weak explanation is the application of the Milankovitch orbital functions causing an interglacial warming period.

7. The out-of-phase warming of Antarctica shown on the chart represents the sliding of the ice sheet into the ocean and the temporary surface of warmer slush, ponds, and the invasion of ocean water onto parts of the land. The renewed condensation process over the continent causes heat input. Hence, the Antarctic shows a mild heating trend with the deuterium isotope proxy at the start of the YD because the East Antarctic Ice Sheet (EAIS) lost most of its ice at the beginning of this period. Due to glacial isostatic adjustments the East Antarctic landmass slowly rises to its present level above sea level while the ice load begins to increase again. The complete demise of the Laurentide Ice Sheet will take about 8,200 years BP. The new North Polar ice cap begins forming on the Arctic Ocean.
8. The second freshwater flux (10,200 to 8,700-year BP) shown on the YD chart very possibly represents the final transfer and mixing of the melted Antarctica ice sheet via thermohaline global ocean currents.

The conclusion is that the well-defined boundaries of the Younger Dryas glacial stadial period represent closely the same period as the Great Deluge with its recovery of receding seas. The largest difference between this interglacial stadial period and other recent ones is that a crustal/mantle shift occurred – relocating the polar regions by 23 to 25 degrees latitude. This latitudinal shift caused the major northern ice sheet to move into a temperate zone where ices would completely melt and never return and slide the southern polar ice sheet into the ocean causing a sudden global flood. Furthermore, the crustal/mantle shift impacted the world, causing a cold, dry, inhospitable, frequently stormy, and dust-laden atmosphere. The dustiness is a prominent feature in ice and seabed cores. The ice cores indicate 20 to 25 times greater dust than now. These ice cores are possibly measuring the dust that settled during the YD period. Ice cores more than 8,500 years old cannot measure age by counting layers because of compression and the smearing of the layers. Perhaps the analysts are looking at the smeared ice and mathematically integrating and computing the wrong age, thinking 15,000 to 20,000 instead of the 11,500 years BP when the severity of dusty atmospheres and the global flood caused the Holocene extinction event as revealed mostly by radiocarbon dating.

Evidence for a sudden global flood is not found in the deep-seabed coring data and needs resolution. The models for the flooding by the Laurentide Ice Sheet and the sliding of the East Antarctic Ice Sheet (EAIS) into the ocean are completely different. Sliding of the Antarctica ice sheet into the ocean is comparable to dropping ice cubes into a glass of water. The water immediately rises. Then the ice melts quickly, maintaining the same water level. The melting of the Laurentide Ice Sheet is like ice cubes inside a refrigerator with the temperature reduced one or more degrees above freezing to induce complete melting over much longer periods. By reviewing the *Post-Glacial Sea Level Rise* chart, the average rise is about 100 meters per 8,000 years or 0.0125 meters per year. The conversion is 0.492 inches per year. Let's say a typical civilization lasting 200 years needs to deal with about 8.2 feet in sea-level rise over the entire life of its harbors and shoreline infrastructure. This sea-level change seems reasonable, but when high tide comes and keeps repeating itself, we have a sudden global flood spoken about in legends and traditions.

Let's run more numbers. The *Post-Glacial Sea Level Rise* indicates a sea level of about 60 meters below sea level during the Younger Dryas period. The current EAIS has about 174 feet or 53 meters of equivalent ocean water. The pre-deluge equivalent for EAIS is postulated at 120% or about 64 meters. The "waters from the deep" or superheated steam and sludge from mid-oceanic rifts are postulated to increase the total at the same time, which is about 20 meters of equivalent ocean water. Also, the total ocean water/ice inventory should increase due to excessive calving of the Laurentide Ice Sheet shoreline regions when the Antarctica flood waters arrive. The water inventory to raise sea level quickly above pre-deluge sea level is attained by adding [64m + 20m + 56m (from extra calving of Laurentide)] = 140 meters. Some of this water/ice inventory remains under the slush layer on Antarctica. Estimating old ice left under the slush layer of 20m, sea level is computed to rise a total of [140m – 20m] = 120 meters or 395 feet above pre-deluge sea level. Of course, the total sea-level rise for humankind during the Great Deluge is [60m below sea level + 60m above] = 120 meters or 395 feet. Paleo flooding has many unknowns making a more detailed determination impossible. However, long-term contributing causes are measured in fractions of millimeters per year and are ignored due to the scale and suddenness of this global flood. Some of these long-term causes are changes in the volume of ocean basins; mass and expansion of ocean water; isostasy of ice, water, magmatic extrusions, sediments, and density of Earth's interior; tectonic-type vertical adjustments; the compaction of ice and sediments; and departures from the Earth's geoid. A better determination can be attempted with a computerized program, but the inputs present an insurmountable challenge.

Is it possible for sea level to recover approximately to pre-deluge levels in about 500 years by evaporation and condensation processes that transfer water as snow to the landmass? The average thickness of the present East Antarctica Ice Sheet (EAIS) is 2,160 meters. The pre-deluge thickness is postulated as 120% thicker or 2,592 meters. The equivalent ice to sea-level rise in meters is computed at the [64m total – 20m of ice left under the slush layer] = 44 meters of equivalent sea-level rise. The conversion of EAIS average ice thickness is [2160m of ice / 53m of equivalent sea level] = 40.7 times. Hence, the snowfall needed to recover all of EAIS's melted ice that slid into the ocean is [44m of equivalent sea level rise x 40.7] = 1791m thickness. This computation is extremely simplified since the compression of the weight of snowfall and deep ice is not considered, among other factors.

Five hundred years is used as the period for EAIS gathering enough water in the form of snow to lower sea level to previous pre-deluge levels. Therefore, [1791m /500 years] requires 3.58-meters/year. The GISP 2 ice core data produced a maximum of 0.25 m/yr for the Greenland ice sheet, which never lost all its ice sheet and should be drier than the atmosphere over Antarctica. Expectations of snowfall over Greenland for this period are much less than over Antarctica. Large snowfall rates are recorded worldwide that exceed a [3.58 m/y] requirement for Antarctica. Mount Baker in the state of Washington recorded 95 feet (29m) in one year, and Donner Summit in California recorded 67 inches in 24 hours. With known large snowfall rates the evaporation/condensation processes can remove water from the Southern Ocean and deposit the required snow on the polar continent.

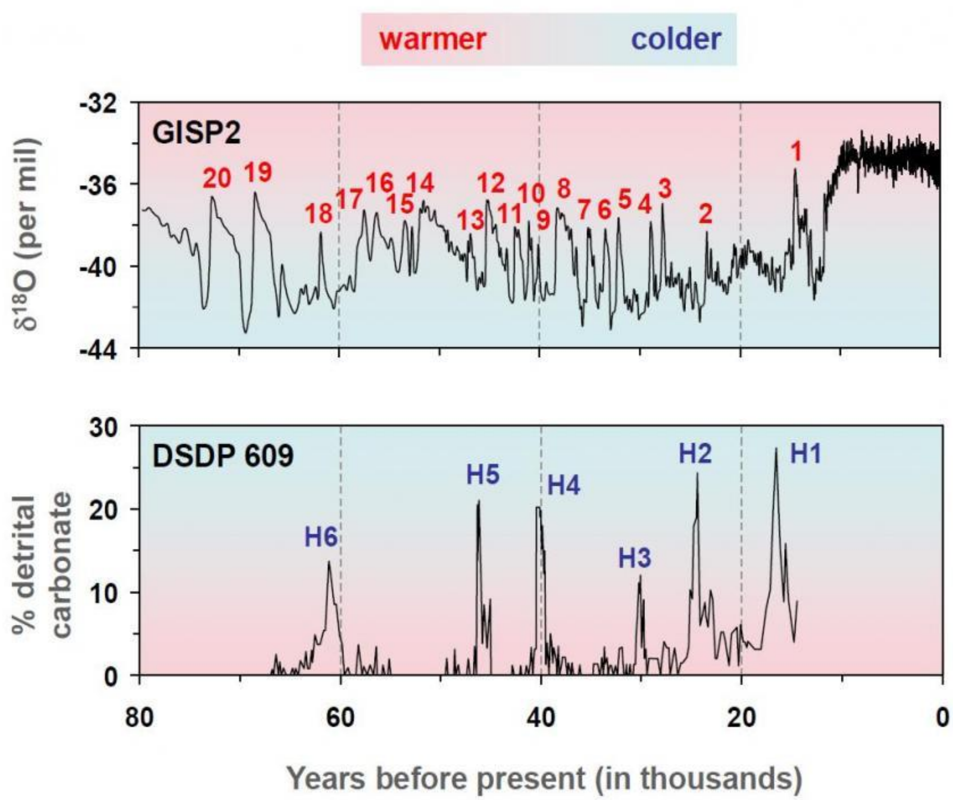
The evaporation process in the southern seas surrounding Antarctica is enhanced by having factors such as a constant flow rate of air that is moving over the water all the time, thereby avoiding a concentration of the water vapor, which discourages faster evaporation. Also, the surface area is immense and surrounds the continent. Since the ice shelves around Antarctica have been broken apart and moving away, the temperature of the sea's surface is raised, providing greater kinetic energy of the molecules at the ocean's surface, which also increases the rate of evaporation.

Why cannot deep seabed coring and ice core analysis detect such a sudden flood which recedes in about 500 or more years? Possibly, the dating methods are not adequate to detect a flood that is sudden and then recedes so quickly. Also, realize that most of the flooding came from the EAIS where seabed studies are rarer than those in the northern hemisphere. Let's take a look at the problematic issues of dating seabed logs and ice cores.

Deep-Sea Sedimentary Features:

Deep-water sediment studies look at laminated mud, interbedded mud and silt, organic diatom ooze, bioturbation, grain-size mixtures, and dropstones. All these visual core descriptions are especially useful when studying ice sheets and glaciers that reach the sea. These sediment studies are applied to the melting of the Laurentide ice sheet that rose sea level from 20,000 to about 8,200 years ago. However, these studies are not useful when evaluating the sliding of the EAIS into the ocean. The ice slid on the slush layers and deposited very little mud, silt, gravel, diatom ooze, or dropstones. Studies off the coast of West Antarctica do not apply since recent major ice sheets did not begin to form there until after the Great Deluge.

The study of detrital carbonate-rich sediments in the northern seas explained episodes when an ice stream delivered sediment onto a deep-sea plain of the Labrador Sea. The C^{14} dating of planktonic foraminifera in cores indicates a massive production of icebergs associated with ice sheet surges during events labeled Heinrich 1 and 2 (between 14 and 15 ka; and 19 and 21 ka respectively).



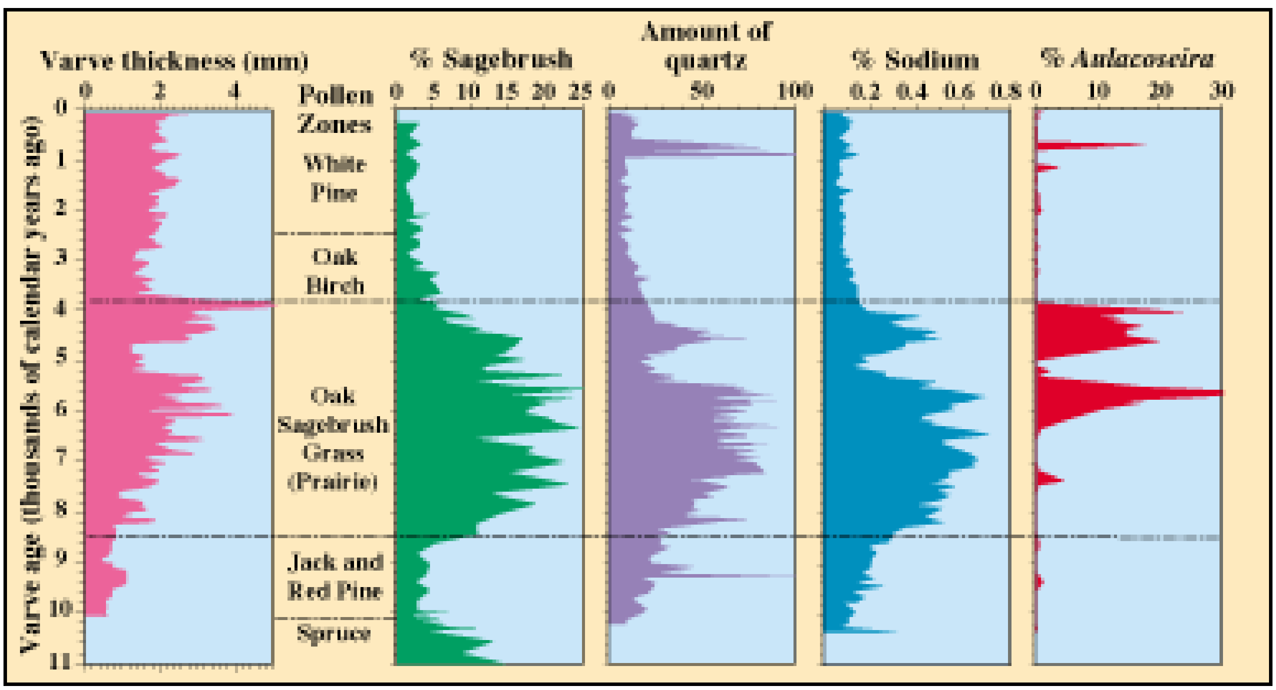
Greenland Ice Core Data Indicating Heinrich Events

These types of studies do not apply to Antarctica, especially the eastern region where ice streams-delivered sediments are rare during the Late Pleistocene epoch.

Coastal Features and Inland Lake Sediments as Revealed by Global Flooding:

The speed of the flood rising and receding cannot produce recognizable coastal regions because there is not enough time for erosion by wave action. The estimated time is only 500 years or less. When the land drains, any new coastal features are possibly erased. Also, due to this ecological disaster, benthic and planktic foraminiferal or forams are significantly reduced or non-existent during the recovery period of this flood. Dating of annual layers would not be discernable.

An interesting fact was discovered in 1999 by a USGS survey of lake sediments of the Upper Mississippi Basin. The varved sediments were dated by using: the diatom Aulacoseira that requires turbulence or windy conditions; the chemical decomposition of sodium in feldspar, which does not go into solution easily during dry conditions; the percentage of Sagebrush requiring drier conditions; and wind-borne silt consisting of quartz. The Elk Lake study claims that pollen in the sediments shows a succession of vegetation that goes back 10,000 years ago when the Laurentide Ice Sheet was in its final retreat. My interpretation is that these variable proxies are evidence of a crustal/mantle shift to a lower latitude that caused drastic climatic changes. The charted data in the study reveals a very sharp ending between 10,000 and 11,000 years ago when possibly the Great Deluge event began.



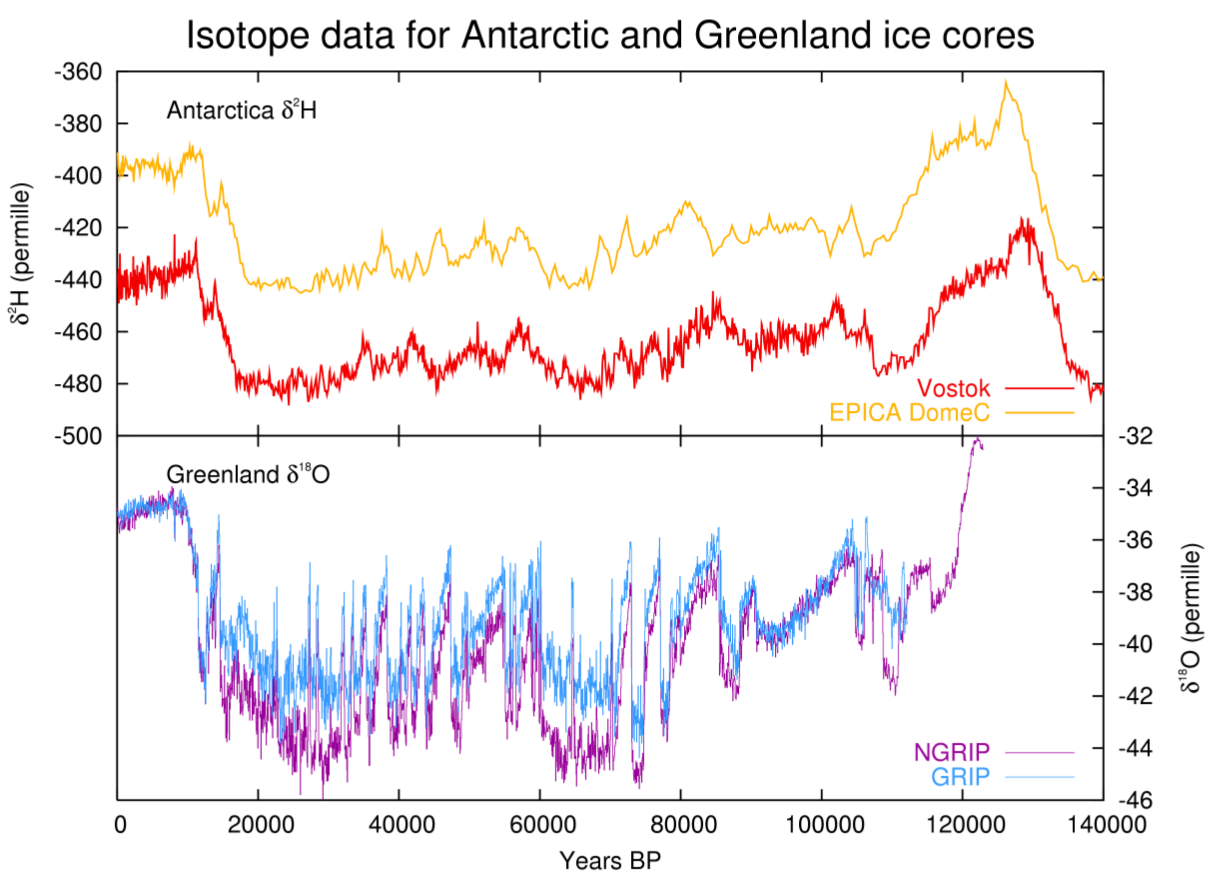
Proxy Indicators of Varved Sediments of Elk Lake

Several Proxy indicators in the varved sediments of Elk Lake show that 8,000 to 4,000 years ago, dry, warm, windy, dusty prairie conditions with sagebrush vegetation occupied this region of Minnesota that is now forested. See .dean@usgs.gov

Using Oxygen, Carbon, and Hydrogen Isotopes as Dating Tools:

A most important fact is that oxygen isotope stratigraphy in benthic and planktic foraminifera from deep-sea sediments provides a time series record of globally synchronous events with a *resolution of a few thousand years* in the Holocene and Late Pleistocene epochs. Because Antarctica's ice sheet surge into the ocean, the synchronicity of global events breaks down. This dating method has deficiencies with: discerning local effects; isotopic disequilibria; and ecological effects or relation of living organisms to one another. And, oxygen isotope records are only a proxy that does not provide absolute age control.

Carbon isotope records help to corroborate oxygen records, but are heavily influenced by biological productivity and foraminiferal (foram) ecological factors. Antarctica during the late Pleistocene epoch lacked biological productivity. When huge amounts of Antarctica ice slid into the ocean, the oxygen isotope record becomes confused by the overprints of the unexpected lower salinity and higher concentrations of ^{16}O isotope. The post-deluge ocean had a higher ratio of $^{16}O/^{18}O$, wrongly denoting warmer climate. Also, more ^{16}O precipitating on the Antarctica continent directly after the loss of ice wrongly denotes warmer climate. This belief in a warming climate by this proxy shows out-of-phase warming of Antarctica on the chart of *Younger Dryas Anomalies.* Oxygen and hydrogen isotopes must be carefully understood to be only proxies.



Temperature proxy from four ice cores for the last 140,000 years, clearly indicating the greater magnitude of the D-O effect in the northern hemisphere.

Comparison of Isotope Temperature Proxies

Some Limitations of Ice Core Analysis:

Both the heavier isotopes of oxygen (^{18}O) and hydrogen (D for Deuterium) are of particular interest because they do not undergo radioactivity decay. The water molecules in ice cores are always depleted in heavier isotopes (having a larger number of neutrons) because it takes more energy to evaporate, and its precipitation is preferentially lost. Hence, ^{18}O and D are less during cold periods than they are in warm periods. However, if a large fraction of the ice sheet thickness is lost into the ocean, then the ocean is unexpectedly cooled, thereby favoring less heavy isotopes from evaporating. A higher ratio of lighter isotopes of ^{16}O and H are transported poleward to indicate a warming trend by their proxies.

Modern snowfall is taken over several years knowing the annual average temperature relationship which is generally used to calibrate the isotope ratios. The length of ice core intervals reveals the seasonal oscillations of temperature except in unknown anomalous conditions such as Antarctica's drastic loss of part of its ice sheet. The deepest ice cores from a site called Dome C in Antarctica indicate steady pulsing of the ice ages over about 100,000 years, which is expected. Also, the climate spanning about 800,000 years shows seven ice ages each interspersed with warm interglacial climates like the one we are living in today.

The problem is that these ice cores go through the newly formed ice after the Deluge that has distinct layers, and then through the smeared ice left behind under the slush layer. What is not popularly known is that layer-counting is only good for the last 8,500 years. After that time, the compression of the ice smears away the layers. Some known dust layers are helpful in the smeared ice but cannot provide absolute dating. Scientists use integration methods and computerized programming along with isotope proxy dating to achieve a climate history older than 8,500 years ago. The accuracy and precision of these methods are given in units of 10^5 and 10^6 years. Hence, the recent Deluge caused by a surge of the EAIS occurring suddenly and recently spanning only 12,900 to 11,500 years ago is not revealed by the smearing of annual ice layers occurring after 8,500 years of annual snowfall.

Reasons for problematic cosmogenic nuclide dating:

Cosmogenic nuclide dating uses the interactions between cosmic rays and nuclides in glacially transported boulders or eroded bedrock to provide the age of rocks at the Earth's surface to determine ice-sheet thinning and recession. The difficulty in East Antarctica is that the ice sheet is thick enough to continue to the ice shelves at the shoreline, eliminating any study of exposed moraines or bedrock.

The mountain ranges that divide West from East Antarctica have exposed rocks with long exposures with very old ages. However, the hypothesis is that the flow of the moving ice sheets during the Great Deluge moved eastward away from these mountains. These mountains were not involved in the ice sheet surge and should show some ages much older than the Younger Dryas period. After the flood, the entire expanse of this detached ice sheet was completely covered again.

Although this dating is effective over short to long timescales of 1000 to 1 x 10^6 years, Antarctica is not a good place for its application. Most ice sheets have either formed anew or are growing and not receding since the flood era on both East and West Antarctica. This dating method is excellent for moraines and exposed bedrock for receding ice sheets and glaciers, such as is found with the disappearing ice sheets in the northern hemisphere.

Radiocarbon carbon dating accuracy is questionable during the Great Deluge:

Radiocarbon dating's basic assumption is that the ratio of isotopes $^{14}C/^{12}C$ can be represented by a calibration curve that remains the same over the preceding thousands of years. The carbon dating is confirmed by the matched dating of tree ring data that is now extended from 8,000 to 13,000 years. The tree ring data helps to design corrections into the not-so-constant calibration curve. However, radiocarbon dating may be ill-suited to the volatile Younger Dryas period. It is theorized that a celestial visitor caused a surge of solar wind and coronal mass ejections (CME) to wash over Earth's magnetosphere thereby increasing the magnetic fields of both the Earth's dipole and its ionosphere. These cosmic and atmospheric disturbances are addressed and predicted for radically changing or depressing the radiocarbon calibration curve.

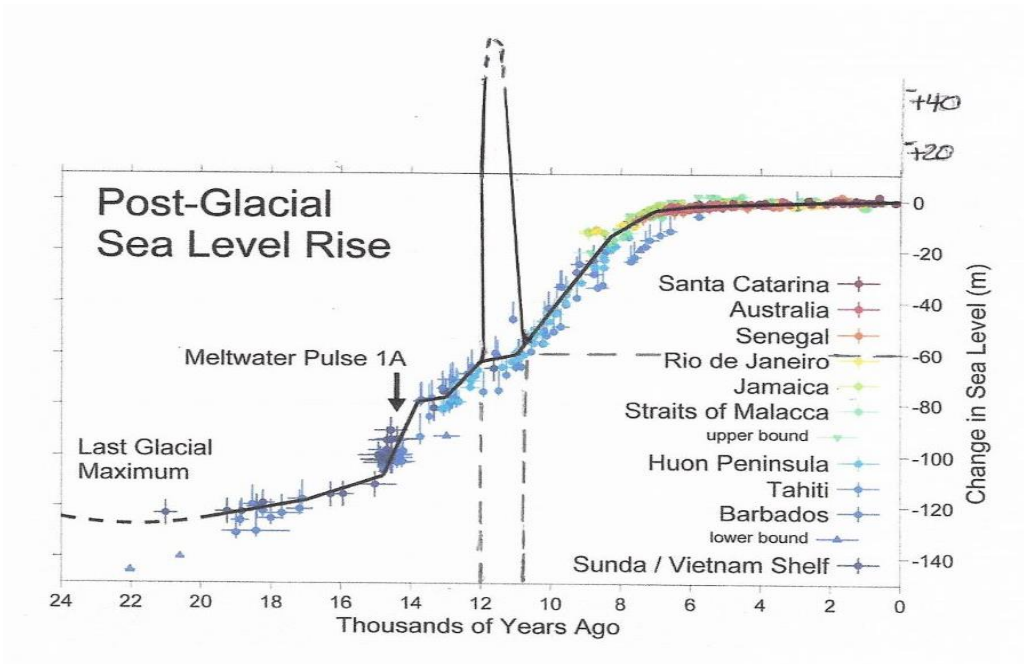
The Great Deluge cataclysm also created other factors to depress this icon of constant exposure of the ^{14}C isotope and varying ^{12}C isotope input. Some of these factors are listed:

1. Global conflagrations from the burning of organics by electrification via severe ground currents and lightning added more CO_2 called the "fossil fuel effect."
2. The "hardwater effect" occurred and is due to rivers or streams from the accelerated melting Laurentide ice sheet that passed over limestone and acquired carbonate ions that were never exposed to ^{14}C from the atmosphere.
3. The "marine effect" comes into play because of the mixing of deep and surface waters that takes much longer than the normal mixing of atmospheric surface waters with more ^{14}C. Normal correction for fractionation of about 940 years may not be enough during these chaotic times.
4. An expected increase of volcanic eruptions during these times brings more CO_2 from underground chambers that were never exposed to ^{14}C. Volcanic eruptions produce buried plants that have known depressed radiocarbon ages of as much as 1,000 years.

Radiocarbon dating accuracy and precision are affected by the cataclysmic events during the Younger Dryas. The resulting depressed calibration curve wrongly estimates events occurring too early. Also, the curve is suspected to have been flattened for about 1,000 years to create a cluster of predicted fauna and flora extinction occurring simultaneously at around 11,500 years BP, the end of the Younger Dryas. This idea of a depressed radiocarbon calibration curve predicts the beginning of the YD at 12,900 years ago occurring earlier and shortening the YD period.

Briefly summarizing, the Younger Dryas period, with its possibly fuzzy precise boundaries, is the time when the Great Flood, with all its attendant catastrophes, occurred. The paradigms of thinking that stop scientists from focusing elsewhere for resolutions are that there is absolutely no possibility for a global flood, or a partial shift of the crustal/mantle unit, or an electrical/magnetic storm washing over and shrinking the Earth's magnetosphere. The oceanographers, with their problematic post-glacial sea-level record, suffer from their paradigm that the ocean always continued to rise due to the melting of northern hemispheric ice sheets these past 20,000 years. Their simple answer is that the Earth entered into a warmer interglacial period while dismissing or ignoring the mysterious anomalies of the Younger Dryas period and the demise of the Laurentide Ice Sheet and the severe, permanent, unanswerable climatic changes in Siberia and Alaska.

Given the listed parameters for the hypothesized global flood, the following chart for *Post-Glacial Sea Level Rise* is revised. As discussed previously, the sudden water inventory input is from the displacement of the East Antarctica Ice Sheet; the ice sheet surges and ice calving from the melting Laurentide Ice Sheet; and, a postulated amount coming from subterranean reservoirs called 'hydroplates' located under mid-oceanic rifts.



Revised Post-Glacial Sea Level Rise Showing Global Flood During the Younger Dryas Period

Then the ocean recedes over 500 or more years. Water from the flooded oceans returns to East Antarctica, adds new ice sheets on West Antarctica, and creates permafrost in Siberia and Alaska. The super-critical heated, pressurized water that ejected into the atmosphere left vacant cavities under the oceans that collapsed and accounted for more reduction of the peaking flood level. Then the Laurentide Ice Sheet that was shifted from arctic to a temperate zone by a crustal/mantle shift of 23 to 25 degrees latitude continued its final melting to raise sea level slowly until about 8,200 years ago. The ocean then reached an equilibrium and has remained almost constant until today. The Arctic Ocean located at the new North Pole became frozen but did not affect the overall sea level.

If scientists, specifically oceanographers, and glaciologists, can start believing in the real possibility of a global flood, instead of a myth, then a real search for more confirming evidence and answers can begin.