Part II: the Flood

Evidence of Flood at Schmie

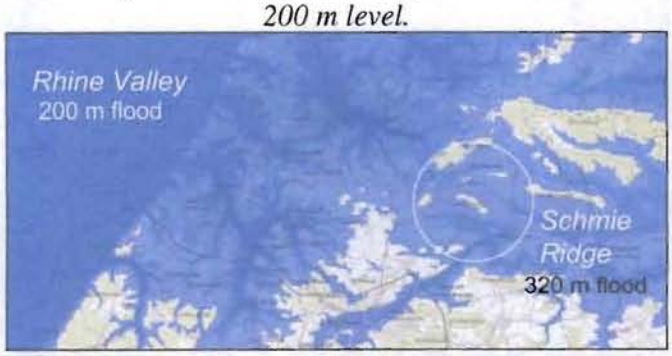
Flood level at Schmie was 320 m asl

A flood of 320 m would cover the town of Schmie but bypass the high plateau south of Schmie, as per the text (Figure 26).

Figure 26: Schmie ridge (elev. 320 m) south of Schmie was above the flood, but Schmie (elev. 315 m) was flooded.

A flood level of 320 m would isolate the ridge from the mainland, as per the text (Figure 27). In this image, Schmie is the central island of seven islands, which significance would not go unnoticed.

Figure 27: The 320 m flood surrounded Schmie Ridge with deep mud. The Rhine Valley is indicated at the 200 m level.



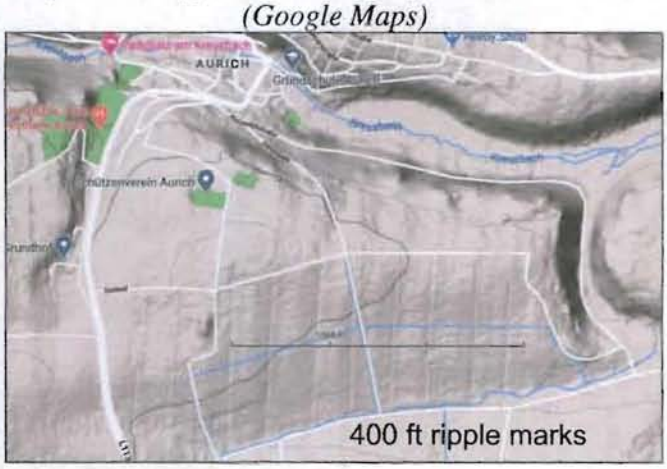
Mountains surround Schmie except for a gap at Saarland to the west. To breach this gap requires an elevation above 400 m (Figure 28).

Figure 28: Direction of flood toward Schmie; 400 m flood will clear mountain range west of Schmie.

Ripple marks left by flood near Schmie

A flood from west to east would leave north-south ripple marks. Just such ripple marks occur beneath the forest throughout the entire region. At Aurich, for example, ripple marks are spaced 400 feet apart on the side of a hill (Figure 29). Likewise, the Rhine Valley is covered with north-south ripple marks, parallel with the river.

Figure 29: Ripple marks on 400 ft centers at Aurich. (Google Maps)



The peak of this flood had to be 400 meters high in order to penetrate the mountains west of the Rhine.

When was the flood, where did it originate, and how high was it? Begin by dating Oðin and Thor in Finland, before they migrated to Germany.

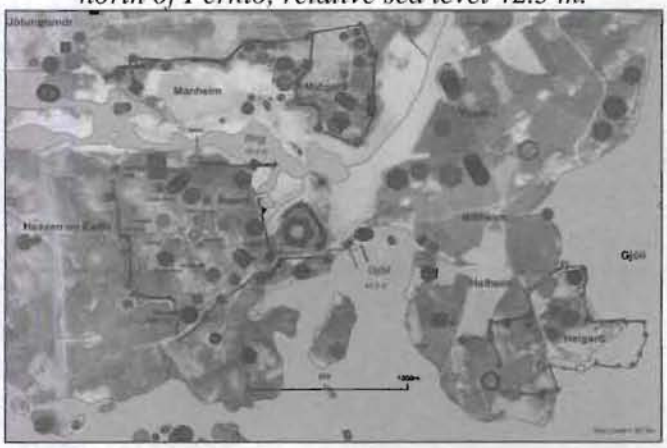
When did Oðin leave Asgard?

The ice core record suggests Oðin left Asgard for the Rhine in 6180 BC, as follows.

Rainbow Bridge preceded the flood

Before living along the Rhine, Oðin lived at Asgard in southeast Finland (60.288N, 23.202E). Enhance aerial photographs reveal a palisaded city one kilometer on a side that agrees with Norse mythology. (Figure 30).

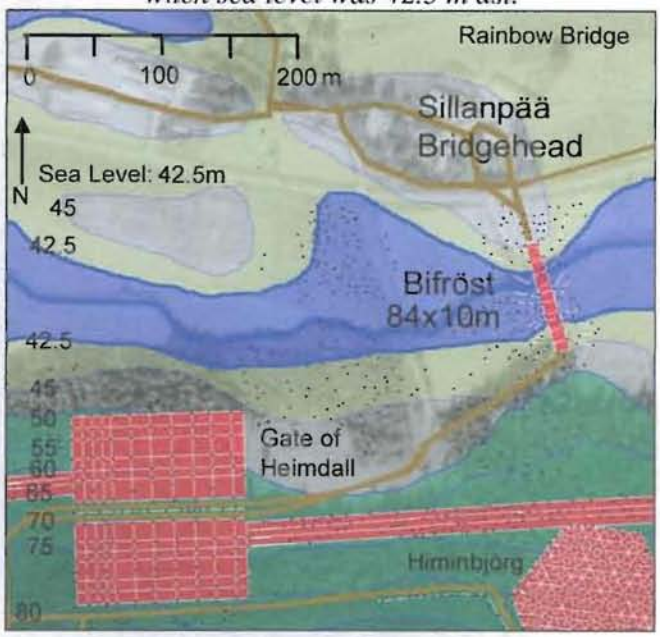
Figure 30: Asgard, Midgard and Helgard, 10 km north of Perniö, relative sea level 42.5 m.



A narrow inlet named Ifing or Elivogar bordered the northern palisade of Asgard. Oðin built a bridge across it, named Bifrost or Rainbow Bridge. This bridge shortened the route from Midgard to Asgard for those people who attended the daily assembly. It was located outside the north palisade of the citadel, accessed by the Gate of Heimdall, close to Himinbjorg, the home of Heimdall. Thor, the largest of the Aesir, was too heavy for Rainbow Bridge and had to wade across Elivogar each morning. The name Rainbow comes from Elivogar, whose last syllable means 'bow, rainbow', named for Orvandel-Aurvandil, the archer, who lived beside it. This is the same Aurvandil whom Bragi drew on the cliff wall.

Topo map 2021-10 names a road intersection north of the bridge *Sillanpää* meaning 'Bridgehead'. Spruce trees growing in old post holes suggest an outline of the bridge, 10 m wide by 84 m long. Immense foundation stones still exist, used by tractors to cross the swampy waterway. It was built when relative sea level was 42.5 m (Figure 31).

Figure 31: Rainbow Bridge, outside the north palisade of Asgard, crossed Elivogar at Bridgehead when sea level was 42.5 m asl.



The next step is to determine when 42.5 m sea level existed.

Relative sea level at Perniö was 40.7 m asl

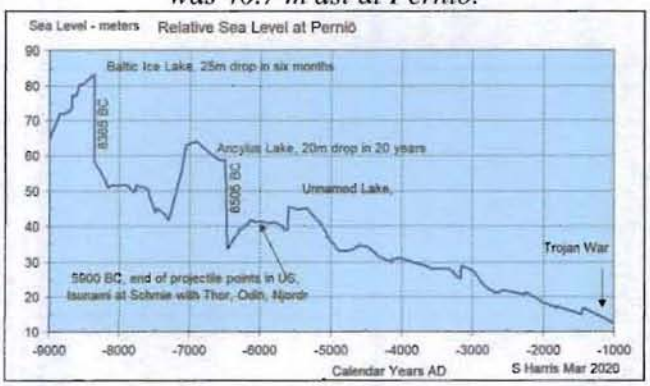
Matti Eronen gathered relative sea level data from Rauma, 136 km NW of Perniö, and from Tammisaari, 19 km SE of Perniö. Combining his data with a curve of absolute sea level from Florida, then ratioing for Perniö part way between, creates a detailed graph of relative sea level at Perniö (Figure 32).

Going north, the difference in uplift was 0.18 meters per kilometer. Bifröst was 10 km north of Pernio, which gives a difference in elevation of 1.8 m. Subtracting 1.8 m from 42.5 m at Bifrost gives an elevation of 40.7 m at Pernio.

Rainbow Bridge was built around 6200 BC

From Figure 32, relative sea level at Perniö was stable at 41 m asl between **6200 BC and 5800 BC.** During this period, Oðin built Bifrost, and afterward left for the Rhine. He departed well before 5600 BC, when something blocked the outlet of the Baltic Sea and caused a five-meter jump in elevation that drowned Rainbow Bridge.

Figure 32: Relative sea level vs time at Perniö in Finland. Ten kilometers north, Asgard had slightly higher sea level. In 6000 BC, 42.5 m asl at Asgard was 40.7 m asl at Perniö.



Finbul Winter caused Oðin and the rest to leave

Norse mythology provides a way to estimate Oðin's departure date. These myths describe a period of severe cold, called Fimbul Winter, when three winters passed with no intervening summer. In order to survive, most inhabitants of Asgard left and were never heard from again.

However, Victor Rydberg traced the exploits of numerous kings, clan chiefs and wives across Europe and India, and discovered that they were the same people but with different names. He found that they had separated into two opposing groups, one centered in Sweden, Denmark, and northern Germany, the other in Finland, Estonia, Poland, and the Rhine. This same demarcation underlies the Trojan War, with Achaeans from Denmark and Sweden fighting Trojans in Finland and their allies.

With the Baltic frozen solid, migrants skied across the ice to the Rhine Valley. Mythology calls them Niflungs-Gjukungs, the kings on the Rhine, led by sons of Ivalde. These were:

Gjuki-Idi-Dankrat-Irung-Aldrian-Cheldricus-Gelderus-**Slagfin;**

Hodbroddr-Gangr-**Orvandil-Aurvandil**-Agelmund-Eigel-Euglin-Toko-Avo-Ebur-Aurnir-Isolfr-Egill;

Gustr-**Thiazi**-Ajo-Anund-Rognir-Brunni-Asolfr-Vargr-Fjallgldir-Hlebardr-Byrr-Loptr-Haquinus-**Volund**:

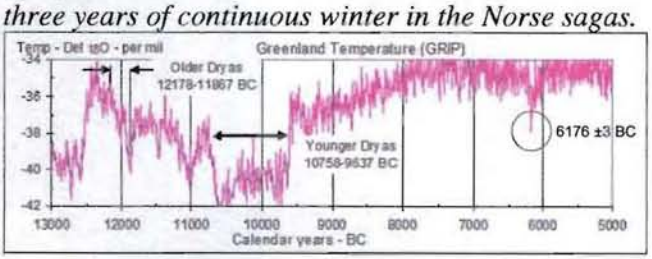
From this list, **Aurvandil,** drawn by Bragi on the cliff wall, was a king of the Rhine.

Getting back to the Fimbul Winter, the first place to look for three years with no summer is the oxygen isotope record from Greenland ice cores.

6176 ±3 BC: short, drastic fall in temperature

In 6176 ±3 BC, GRIP ice core recorded a drastic plunge in temperature, the coldest it had been in 3000 years (Figure 33).

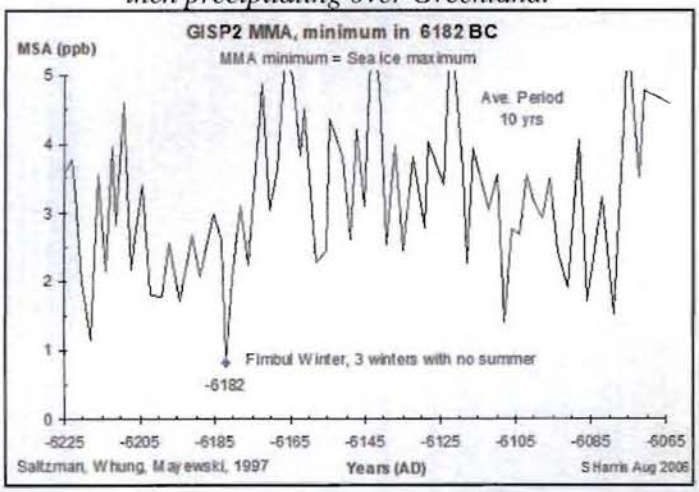
Figure 33: Grip ice cored recorded a minimum temperature in 6176 ±3 BC, which correlates with three years of continuous winter in the Norse sagas.



6182 ±2 BC, maximum sea ice in North Atlantic

In 6182 ±2 BC, GISP2 ice core recorded minimum MSA, which correlates to maximum sea ice in the North Atlantic during the summer (Figure 34). This would occur if the ice never melted during the summer, thus preventing MMA from evaporating from the open sea. The time scales of the two ice cores are close but not exactly the same.

Figure 34: GISP2 ice core record indicates the North Atlantic remained frozen during the summer of 6182 ±2 BC, which prevented MMA from evaporating and then precipitating over Greenland.



Given the date of 6180 BC, what caused the three-year cold? A possible answer lies with a cataclysmic turbidite off the coast of Norway.

Storegga Slide, 6198±28 BC

In 6198 ±28 BC (7308 ±19 BP 14C), a large turbidite slipped slowly off the coast of Norway into the North Sea, called Storegga Slide S2a. This collapse involved 290 km of continental shelf, with a volume of 3500 km^3. Its modest tsunami measured only 9 to 10 m in Norway and 3 to 6 m in Scotland. Coastal Finland might have experienced a meter of flood, not enough to damage buildings that were built 6 m or more above sea level (Figure 35).

Figure 35: Storegga Slide and its possible impact on the Gulf Current (Wikipedia).

However, Storegga Slide may have disrupted the Gulf Stream. Without warm water from the Gulf Stream, the North Sea would remain frozen during the summer. This sea of ice could then cause three exceptionally cold winters and two years without summer in northern Europe.

Oðin left in 6180 BC during the Finbul Winter

A date of 6180 BC satisfies all three constraints for the Finbul Winter, some twenty years after the earliest construction date of 6200 BC for Rainbow Bridge.

Based on a lack of pottery and graves, archaeologists suggest that Germany was deserted or nearly so when Oðin arrived. Much of their analysis depends on finding pots and bodies in burials, but Oðin and his compatriots cremated their dead hand did not use pottery.

This same dearth of material has fooled Finnish archaeologists into thinking that no one lived in Finland, while aerial photography reveals an immense civilization. The small but intense museum at Toija near Salo has not a single ceramic piece before 1700 AD; almost everything was made of wood or bone.

Tsunami triggered by impact in 5760 BC

Tsunami from Texas turbidite would begin 1900 m high

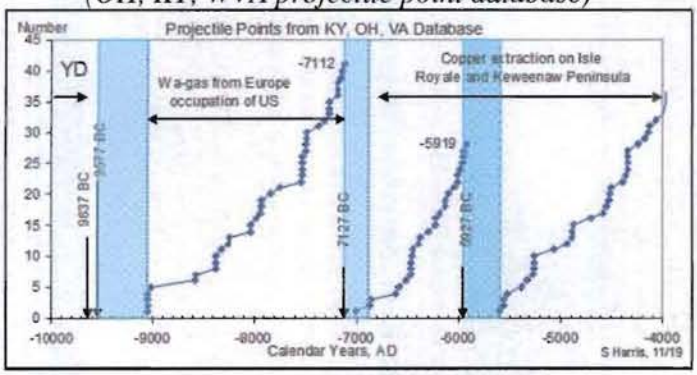
Over time, many inhabitants of Asgard dispersed across Europe and Asia to restart civilizations that had been decimated by catastrophes. Svipdag, Freyja's husband, went to Sweden, where he was called Eric, then followed Freyja to Frisland, which is named for her. Oðin, Thor, Njörd, Tyr, Gunnlöð, Sif, Aurvandil and his brothers moved to the Rhine Valley and established many settlements.

At the plateau east of the Rhine, the Aesir experienced a flood from the Atlantic Ocean that peaked at 320 m asl.

This flood occurred at the same time that a turbidite slid down the continental coast of Texas and pushed part of the shelf into the Gulf of Mexico. It drowned most native Americans living in the South, killed all trees in Iowa for 300 years, and killed the swampy pine forests of Germany for 300 years.

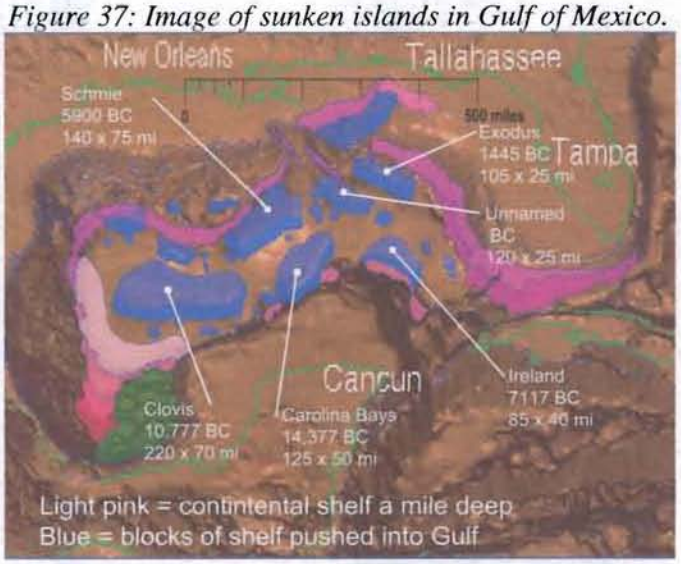
Timing of such a flood can be inferred by a gap in carefully dated projectile points. In the Ohio, Kentucky, West Virginia database of projectile points, a rare 300-year gap begins around 5900 BC, part way through the time span for Rainbow Bridge (Figure 36).

Figure 36: Gap in projectile point dates from 5900 to 5600 BC.
(OH, KY, WVA projectile point database)



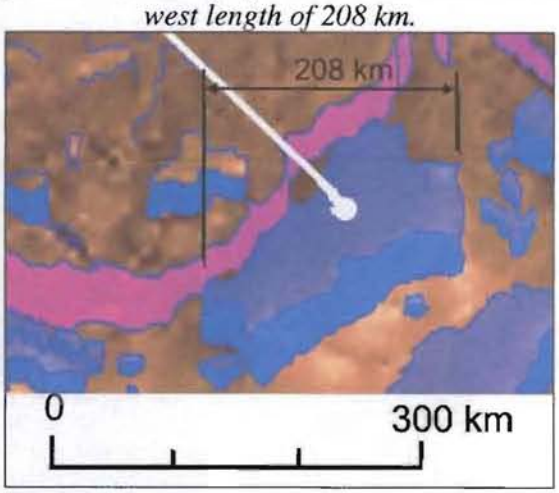
High resolution sonar reveals a number of large islands in the Gulf of Mexico. These were pushed out to sea from the continental shelf by turbidites, which left behind a cratered landscape from escaping gas and oil under high pressure. Of six large islands, a good candidate lies near Texas (Figure 37).

Figure 37: Image of sunken islands in Gulf of Mexico.



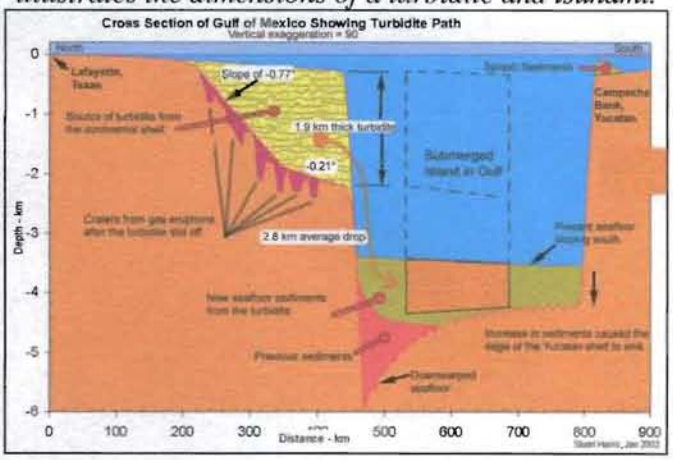
This island measures 115 km by 230 km, about the size of Massachusetts. Its east-west length is 208 km, a dimension that is critical for establishing the runup in Europe (Figure 38).

Figure 38: A closeup of the island reveals an east-west length of 208 km.



A cross section across the Gulf of Mexico illustrates vertical dimensions of a typical turbidite and resulting tsunami: 1900 m thickness at the edge of the shelf, 2800 m fall into the Gulf, 1900 m tsunami above the turbidite, and 4300 m ocean depth below the turbidite (Figure 39).

Figure 39: Cross section across Gulf of Mexico illustrates the dimensions of a turbidite and tsunami.



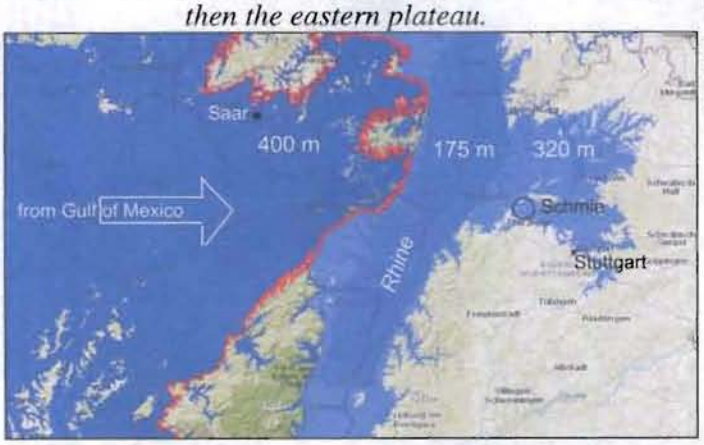
Using these numbers, a model of the tsunami by Hall and Watts produces a runup of 398 m through the Saar mountains that border the west side of the Rhine Valley (Table 1).

Table 1: Calculation of runup at Saar mountains using Hall and Watts formula.

Variable	Amt.	Unit
do = east-west turbidite length	208	km
ho = turbidite height at edge of shelf	1900	m
h1 = depth of Gulf of Mexico	4200	m
d1 = distance to Saar Mts	8380	km
d2 = distance to English Channel	7615	km
depth English channel today	75	m
sea level in 5900 BC	-10	m
h, depth of English Channel 5900 BC	65	m
k1 = do/d2 radial distance reduction	0.027	
h2 = k1*ho radial lowering of wave height	51.9	m
k2 = ((ho+h1)/h)^.25, depth correction of wave	3.11	
H = k2*h2 corrected wave height	161.5	m
Runup calculation, Hall & Watts (1953)		
a constant	3.02	
g constant	0.91	
k = R/h = a*(H/h)^g	6.915	
R = k*h runup at English Channel	449	m
k4 = d2/d1 radial decrease to Saar	0.909	
R1 runup at Saar mts, 5900 BC	408	m
sea level correction	10	m
R1 runup at Saar Mts today	398	m

Figure 40 shows how runup from the tsunami passed through mountains east of Saar. The red line represents the extent of the 400 m runup. East of this line, a wall of water cascaded down into the Rhine Valley, which has two floodplains, a narrow plain at 110 m asl, and a wide plain at 175 m asl. Above 250 m asl, the valley spreads eastward into farmland north of Stuttgart, which is easily plowed due to a thick layer of sediment. Here and there on this farmland rise wooded plateaus, one of which is Schmie.

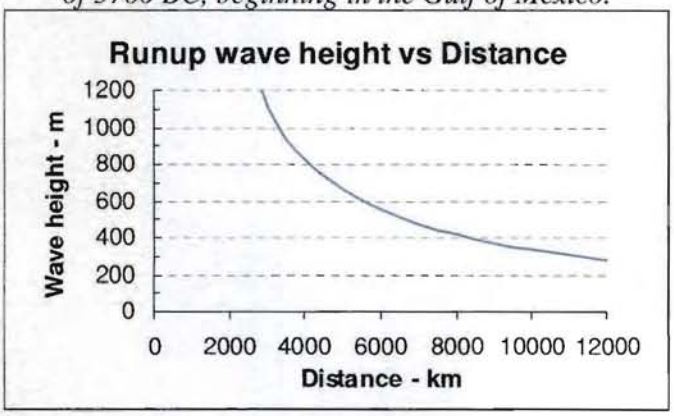
Figure 40: Runup of 400 m flooded the Rhine Valley, then the eastern plateau.



Calculation of runup for any distance

The distance between the center of the Texas turbidite and the Saar Mountains is 8380 km, where runup was 398 m. Wave height varies inversely with distance, so an estimate of wave height for any east-west distance can be calculated. Runup north-south would be slightly less because the piece of land that created the tsunami was narrower.

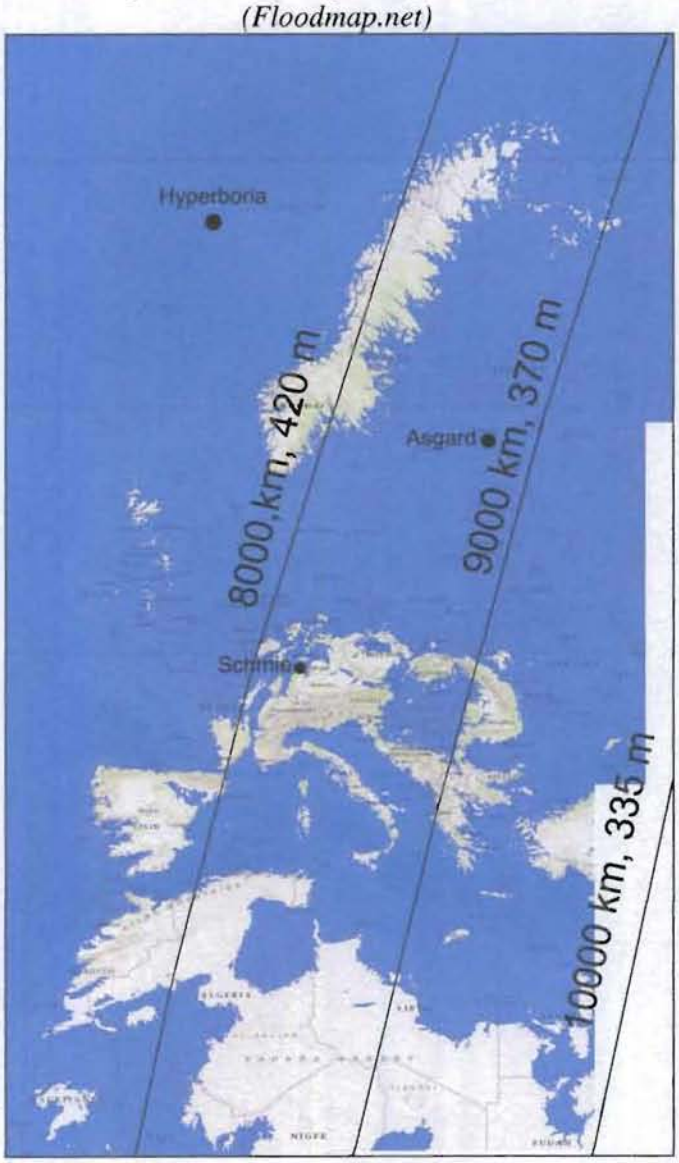
Figure 41: Runup height versus distance for the flood of 5760 BC, beginning in the Gulf of Mexico.



Extent of flood in Europe

The flood in Europe was devastating, as shown in the flood map below. It measures runup, which is twice the wave height at sea level. The origin was so far away that it acted like a fast-moving tide rather than a wave. The Mediterranean was protected by the narrow Strait of Gibraltar, while the Carpathian Basin was protected by a circle of mountains. The Black Sea and Caspian Sea might have filled. Asgard, elevation 60 m, was destroyed, as well as most of the island of Hyberborea where giants dwelt. Survivors were in Norway, Sweden, central Europe, Iberia and the coast of the Mediterranean.

Figure 42: Extent of runup in 5760 BC (Floodmap.net)



Date of flood in America, c 5750 BC

In America, several events are associated with a catastrophe around 5750 BC.

5770±50 BC: last projectile points in SE US

A continuous sequence of dated projectile points in the central US end around 5820 BC and resume around 5720 BC (PIDPA, 2010).

The last projectile points have a wide error margin.

Edisto Beach, SC, 6960 ±240 ^{14}C BP (5820 BC)

Hester, MS, 6965 ±180 ^{14}C BP (5820 BC)

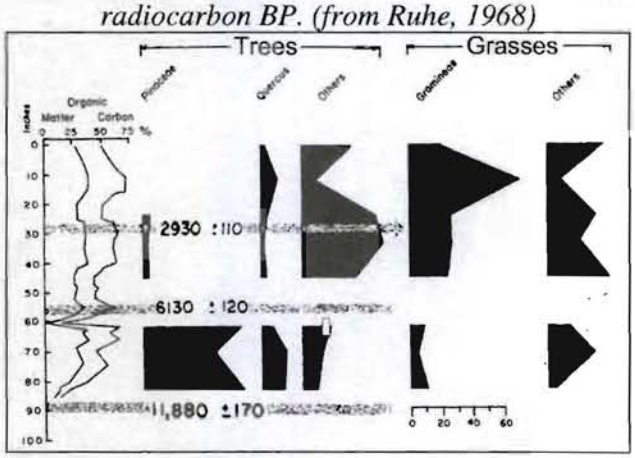
The next projectile points are close together at three sites:

Koster, IL, 6860 ±80 ^{14}C BP (5730 BC)
Dust Cave, AL 6840 ±120 ^{14}C BP (5722 BC)
Little Salt Springs, FL, 6830 ±155 ^{14}C BP (5720 BC)

5750 ±50 BC: Iowa pollen core, life ceased to exist

A pollen core from Sumner Bog in Bremer County, northeastern Iowa, elevation 1090 ft (332 m), exhibited total cessation of life 5 inches below the bottom of the next layer with life, dated 6130 ±120 RCBP (5050 BC). Assuming a constant rate of sediment accumulation, the end date was around 5750 BC (Figure 43; Walker, 1966; Ruhe, 1968).

Figure 43: Pollen core from Sumner Bog, Iowa, showing collapse of all life at 62 inches, circa 5750 BC. Pine and oak trees never recovered. Dates are radiocarbon BP. (from Ruhe, 1968)



A landscape dominated by pines and hardwoods never returned; instead, a variety of grasses became normal, with some pine and oak pollen blown in from far away. The unconformity occurred at a depth of 62 inches. Above this unconformity lay 4 inches of reddish-brown silt, whose carbon content and pollen count were zero, which means that neither pines nor other life forms existed within a wide radius. Below the unconformity, sediments were dominated by conifer and hardwood pollen. Two inches below the unconformity measured 8490 BC. Above the sterile reddish silt lay 2 to 24 inches of nearly sterile silt-loam, dark greyish brown to dark grey. 5 inches above the unconformity, within the silt-loam, dated 5050

BC, while 33 inches above dated 1120 BC. By ratioing, the estimated date for the unconformity is 5750 BC, while the sterile silt lasted for 550 years. The tsunami stripped away 20 inches of sediment. (Walker, 1966; Ruhe, 1968; Kleiss, 1970; Van Zant and Halberg, 1976)

5750 BC: significant population decline in South America

Between 5750 BC and 5650 BC, the population of lowland South America declined by 80%, based on the number of dated sites. There was no change in the Andes, which implies a flood. (Riris, 2019).

5750 BC: Mt Mazama exploded, leaving Crater Lake in Oregon

In 5750 BC, Mt. Mazama, 12,000 ft tall, erupted catastrophically and blew out 50 km^3 of magma. Ash covered a million square miles. The collapsed caldera formed Crater Lake. Greenland ice cores recorded a peak of volcanic sulfate in 5750 BC, ten years after a strike in 5760 BC.

Bristlecone Pines have no record

Bristlecone pines show nothing unusual between 5760 and 5750 BC.

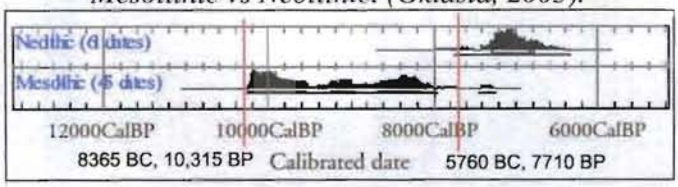
Date of flood in Europe, c. 5770 BC

In Europe and Asia, eleven events are associated with a catastrophe around 5750 BC.

6050 BC: end of Late Mesolithic in Germany

Germany experienced a population decline beginning 6180 BC, a near termination in 6050 BC, and recovery beginning 5450 BC (Gkiasta, 2003) This suggests that the Aesir migrated into an empty Germany due to the Finbul Winter. Their recovery efforts were wiped out by the tsunami. Bragi wrote that only 2000 survived.

Figure 44: Number of dated sites in Germany, Mesolithic vs Neolithic. (Gkiasta, 2003).



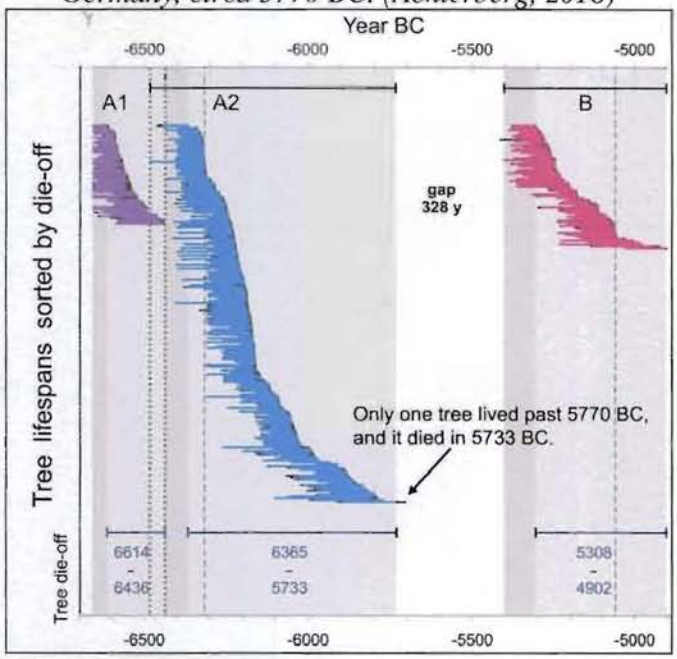
5750 BC: end of Late Mesolithic in Portugal

A survey of well-dated sites in Portugal showed that Late Mesolithic ended in 5750 BC. After a gap of 150 years, the Neolithic began in 5600 BC. (Zilhao, 2000)

5770 BC: second to last pine stump at Totes Moor, Germany

At Totes Moor near Hanover, Germany, elevation 117 m, dendrochronology of 212 in-situ pine stumps revealed a large gap after 5770 BC. Only one tree survived the tsunami, and it died in 5733 BC. No more trees grew until 5404 BC (Figure 45) (Achterberg, 2018).

Figure 45: Death of all pine trees at Totes Moor, Germany, circa 5770 BC. (Achterberg, 2018)



5751 ±49 BC: flood in Denmark

Aarhus Bay in Denmark flooded in 5751 ± 49 BC (7185 ±36 14c BP, UBA-19002 on Corbula gibba), and changed from brackish to full marine conditions. At the same time, sedimentation rate increased dramatically (Rasmussen, 2019).

5750 BC: break in oak chronologies in Britain

5750 BC: break in human occupation sites in Britain

5750 BC: abrupt high rainfall and low temperature in Italy

Italy experienced peak rainfall accompanied by low summer and winter temperatures in 5750 BC. Enhanced Po River discharges changed the salinity of the Adriatic Sea surface and drove Picea and Albies pollen toward the core's site. The preceding years were dry and cold (Combourieu-Nebout, 2013)

5750 BC: lowland bogs changed from fen peat to wetter raised moss in Scotland

5750 BC: Kurile Lake caldera, near Moscow

5750 BC: the last population of Irish Elk perished in Western Siberia

Like wooly mammoths on Wrangel Island, a remnant population of Irish Elk survived in Western Siberia until 5750 BC (Stuart, 2004).

5730 BC: lowest level of peat at Isle of Mann

On the Isle of Mann, the lowest level of peat in the Central Valley dates from 5730 BC to 5615 BC. (Chiverrel, 2006). This does not support a flood in 5760 BC.

Ice core date of impact, 5760 BC

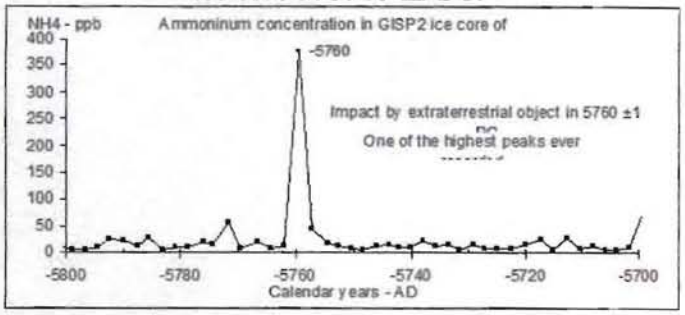
Greenland ice cores recorded three catastrophic events, a small impact in 5772 BC, a tremendous inpact in 5760 BC, and the eruption of Mt Mazama in 5750 BC.

5759.7 ±1.3 BC: comet strike in GISP2 ice core

GISP2 ice core in Greenland recorded a tremendous impact that left a spike of ammonium in the sample dated 5759.7 ± 1.3 BC, twenty times higher than average, one of the highest spikes ever recorded.

This spike indicates a strike or strikes in the northern hemisphere that severely impacted nearby life in addition to the tsunami, i.e., fire and flood, the traditional calling card of celestial impacts.

Figure 46: Spike of ammonium in Greenland GISP2 ice core in 5760 ±1 BC.



This date does not fit Comet Cluster Encke, nor was Heal Lake in Victoria, Canada, flooded by a tsunami at this time.

Smaller strike twelve years earlier implicates Mars

The major strike was preceded by a smaller strike 12 years earlier, in 5771.8 ±1.2 BC. This gap of 12 years suggests that the impactor was a satellite of Mars on a two-year elliptical orbit, guided by Jupiter on a 12-year orbit.

5750.5±1 BC: volcanic sulfate peak in GISP2 ice core from Mt. Mazama

Mt. Mazama erupted ten years later, in 5750 BC, apparently independent of the previous impact.

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