

Three new Baltic lakes

Stuart Harris; Lucinges, France; August 2017

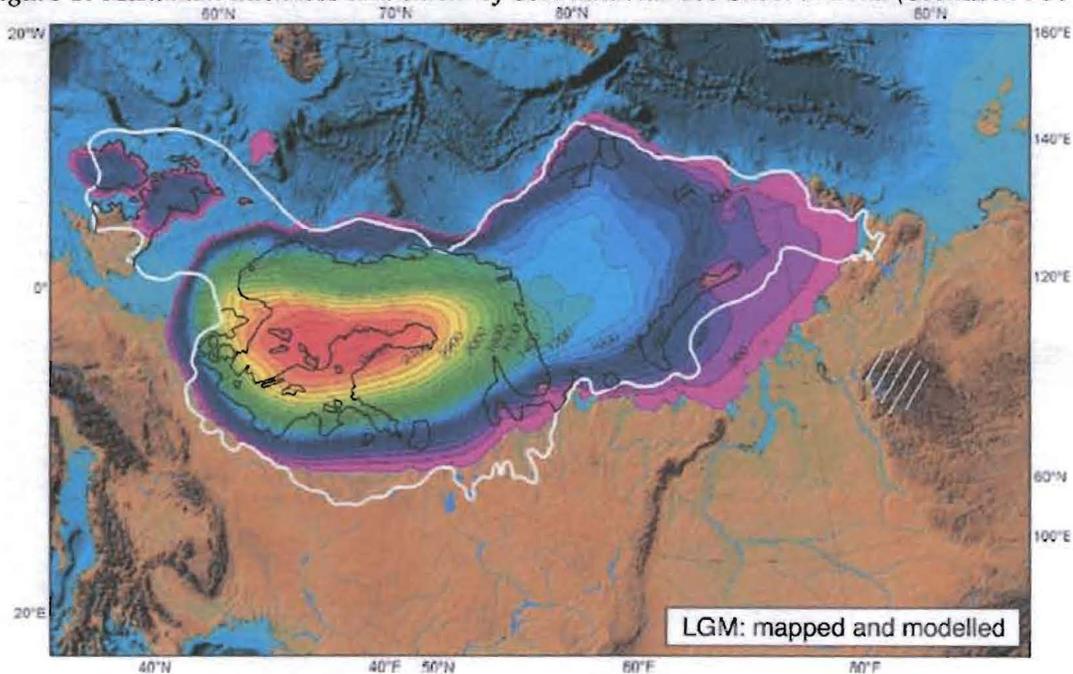
Summary

As the Scandinavian Ice Sheet from the last ice age melted, Sweden rebounded faster than sea level rose, which periodically cut off the outlet to the Baltic Sea and formed a freshwater lake. Four lakes have been identified, Ramsay Sea, Baltic Ice Lake I & II, and Ancylus Lake. This paper identifies three more lakes, Ymir Lake, Noah Lake and Dardanus Lake, named for the flood that preceded each lake. During intervals between lakes, the brackish Baltic Sea was inhabited by different suites of organisms, which led to different names for the seas.

Baltic freshwater lakes

As the Scandinavian Ice Sheet melted, Scotland, Sweden, Finland and Denmark rebounded in proportion to the elevation of the ice sheet (Figure 1). Peripheral countries subsided, like England, Doggerland, Holland and Poland.

Figure 1: Maximum thickness and extent of Scandinavian Ice Sheet in 20ka (Svendsen 2004)



Occasionally the outlet to the North Sea was cut off, leading to the formation of a fresh water lake. This cutoff could occur because the rate of land rise in Sweden exceeded the rate of sea level rise, or a lobe of ice blocked the channel, or a landslide blocked the channel. Four lakes are known, Ramsay Sea, Baltic Ice Lake I & II, and Ancylus Lake. These were identified by freshwater organisms versus salt-water organisms in sediment cores.

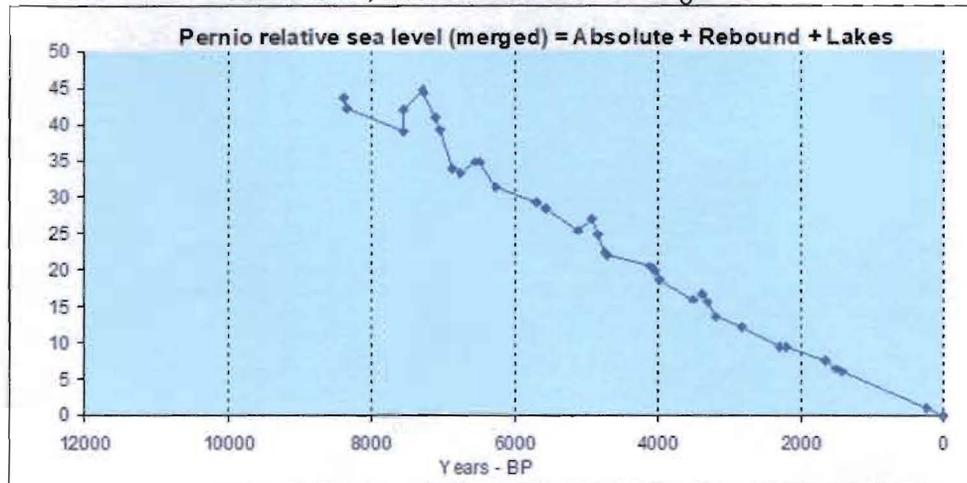
During the long period after the fall of Ancylus Lake to sea level, three different suites of salt water organisms were identified, which led to three different names for the salty portion of the cycle: Mastogloia Sea, Littorina Sea and Baltic Sea. The reason for this difference has remained a mystery that this paper solves by finding freshwater lakes between the seas.

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The discovery of these lakes was an accident, a result of creating a detailed profile of relative sea level at Perniö in southwest Finland. This region supported a wealth of ancient cities, whose age could be estimated with a curve of sea level versus time. Fortunately, the data was available.

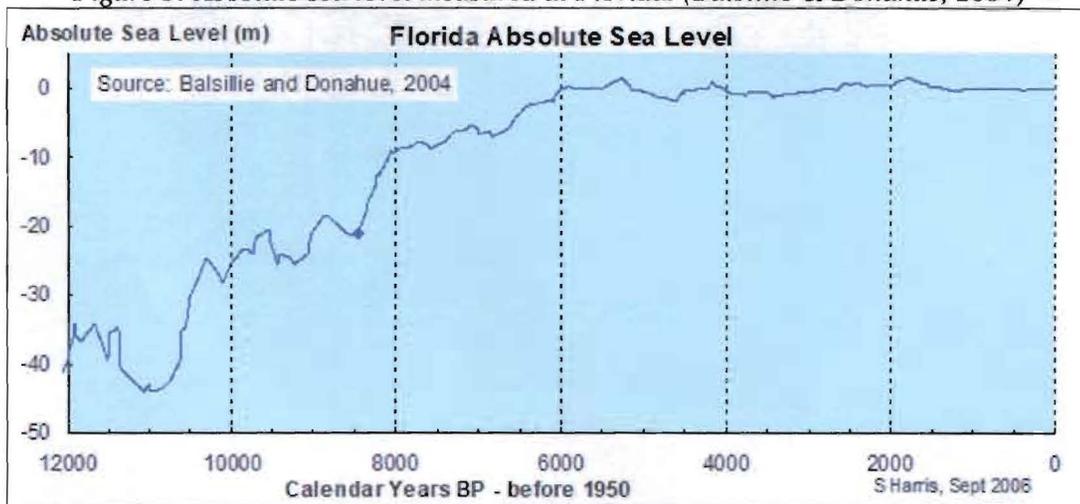
In 2001, a team led by Matti Eronen carefully measured relative sea level at Rauma and Tammisaari in southwest Finland. If rising land is considered to be a plate with a hinge in the middle of the Baltic, then sea level altitudes can be ratioed in proportion to their distance from the imaginary hinge. In this way, the two sets of data were combined into a single set for Perniö, which lies between the two (Figure 2) (Harris 2017).

Figure 2: Relative sea level at Perniö, measured by Eronen et. al (2001) at Rauma and Tammisaari, then combined into a single set.



After obtaining relative sea level, the data was simplified by subtracting absolute sea level. Such information exists for Florida, published by Balsillie and Donahue in 2004, when they used mathematical tricks to combine sixteen disparate data sets from independent researchers into a coherent whole (Figure 3).

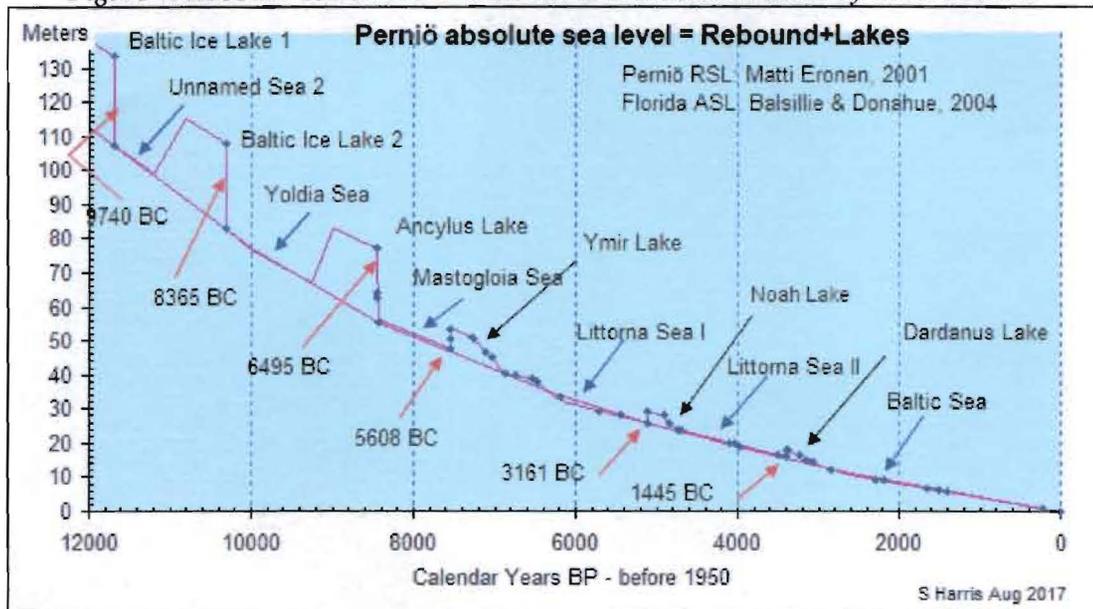
Figure 3: Absolute sea level measured at Florida. (Balsillie & Donahue, 2004)



The result is absolute sea level at Perniö, a simple curve that combines glacial rebound plus freshwater lakes (Figure 4). Eronen's measurements ended in 6500 BC, but a wealth of

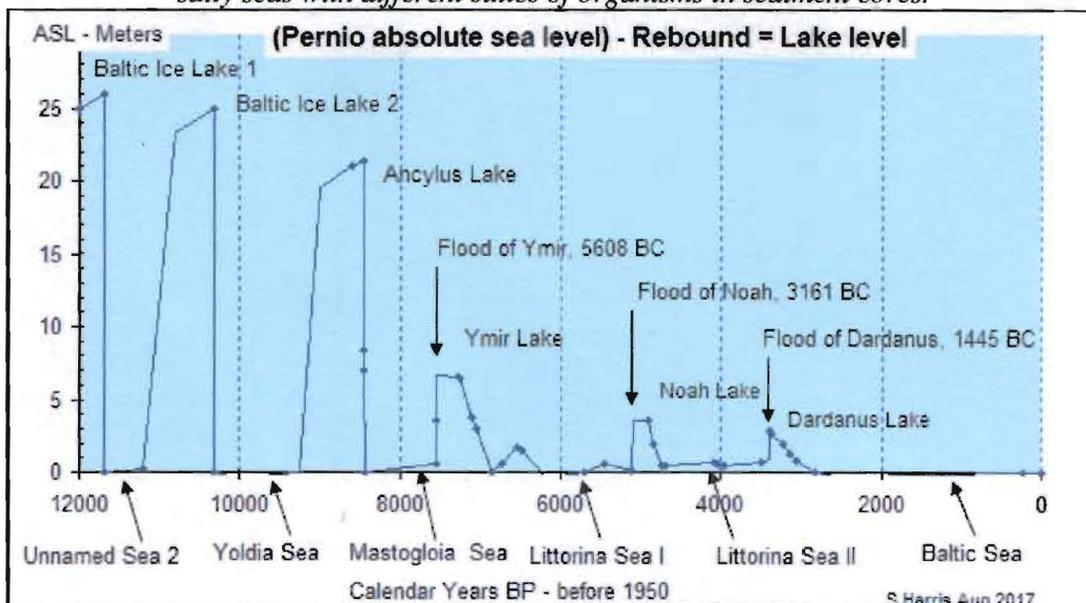
additional measurements around the Baltic describe older freshwater lakes. This is not as easy as it seems because the best markers on the landscape come when sea level is stationary and forms a terrace that can be followed for a long distance.

Figure 4: Absolute sea level at Perniö. Dots are measurements by Matti Eronen.



The lowest points can be used to estimate a smooth curve of glacial rebound. Subtracting glacial rebound from absolute sea level leaves an intuitive view of freshwater lakes (Figure 5). Now appears the reason for so many names of seas – they were separated by freshwater lakes! The new lakes are named **Ymir**, **Noah**, and **Dardanus** for reasons below. (Thanks to **Christine Pellech** for suggesting a theme.)

Figure 5: Absolute sea level less glacial rebound at Perniö reveals three new lakes separated by salty seas with different suites of organisms in sediment cores.



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History of Baltic freshwater lakes and seas

Ramsay Sea coalesced from a string of lakes that bordered the south coast of the Scandinavian ice sheet after temperature suddenly warmed in 17,500 BP and the glacier began to melt. In 13,300 BP, Ramsay Sea stretched from the Danish islands to Latvia, Estonia and NW Russia.

An abrupt 5 to 10m drop to sea level occurred in 12,847±2 BP (10898±2 BC) by varve count (Muschitello, 2008). This drop was initiated by a comet or meteor strike that occurred at the same time, 12,848±2 BP, measured by a peak in NH₄ in GISP2. Sediments from drifting bergs stopped for 130 years as the edge of the ice sheet grounded firmly. The drop created Unnamed Sea 1.

The drop was not triggered by the Younger Dryas event, which began 50 years earlier. The Younger Dryas cold spell began between 12,890 and 12,880 BP as a steep drop in temperature measured by the relative abundance of O₁₈ in ice cores. An exact date of 12,888 BP (10939 BC) was discovered by Petaev et al. in 2013, who found an extraordinary spike of platinum in GISP2 ice core that could only originate from a meteor strike.

Unnamed Sea 1, lasted perhaps 500 years, from 12847 to ~12,300 BP, when an ice dam created Baltic Ice Lake 1.

Baltic Ice Lake1, 26m above sea level, lasted about 600 years, from ~12,300 BP to 11,690 BP, until an ice dam was breached near Mt Billingen, causing a catastrophic drop to sea level in 11,690 BP (9740 BC), forming Unnamed Sea 2.

Unnamed Sea 2, lasted about 500 years, from 11,690 BP to ~11,200 BP, when rising land uplifted the sill near Mt. Billingen and created Baltic Ice Lake 2.

Baltic Ice Lake2, 25m above sea level, lasted about 800 years, from ~11,200 to 10,315 BP, until breached by a catastrophic flood in 10,315 BP (8365 BC), which opened a channel to the Kattegat called the Billingen Gateway. In just 1 or 2 years, or some say in six months, lake level dropped 25m to sea level, to become Yoldia Sea.

Yoldia Sea lasted 1065 years, from 10,315 to 9,250 BP (8365 to 7300 BC), before its channel was cut off by rising land to form Ancylus Lake.

Ancylus Lake, 20m above sea level, lasted 805 years from 9250 to 8445 BP (7300 to 6495 BC). The drop to sea level took 30 years, forming in 8415 BP Mastogloia Sea.

Mastogloia Sea lasted 860 years, from 8415 to 7563 BP (6465 to 5608 BC), before its outlet closed to form Ymir Lake.

Ymir Lake formed abruptly with a 6.7m rise above sea level caused by the Flood of Ymir in 5608 BC, which in turn was initiated by a comet strike. The sky changed and a new calendar had to be started. At the same time, a channel between the Black Sea and Mediterranean Sea opened up, and started to flood the Black Sea with salt water. The climate of North Africa changed and the Sahara began to turn into desert. Ymir Lake lasted 700 years to 4900 BC, when an outlet eroded down to sea level to form Littorina Sea 1.

Ymir, meaning Highest Man, drowned during the flood. From his blood came the sea, from his bones the land, from his eyebrows the pine trees. His immense, rectangular cairn occupies part of the highest hill in the Commune of Perniö named Multamäki meaning 'Earth Hill'. Afterward, the Aesir and Vanir ruled the Baltic from their capital at Asgard on the same hill. Palisades erected around cities offered some protection against an increasing number of hostile giants.

Littorina Sea I lasted 740 years, from 4900 to 3161 BC, until a blockage due to events associated with Noah's flood in 3161 BC formed Noah Lake.

During this time, many palisaded cities occupied the northern half of the Commune of Pernio.

Noah Lake formed abruptly with a 3.6m rise above sea level caused by Noah's Flood in 3161 BC, which in turn was initiated by a comet strike. The sky changed and a new calendar had to be invented. It lasted 500 years to 2660 BC, when an outlet eroded down to sea level to form Littorina Sea II.

Noah survived the flood on an ark, whose contents helped to repopulate the world. During Noah Lake's existence, Finland was deserted.

Littorina Sea II lasted 1100 years, from 2660 to 1560 BC, until rising land raised the sill of the outlet above sea level to form Dardanus Lake.

A global catastrophe in 2450 BC appears to have eliminated whatever life was left in Finland. In 2193, a devastating flood drowned a large fraction of the Baltic and North Sea population. In 2092, Gaia and Ouranos arrived at the shore of Poland with 600 men and women, built a village at Gdansk, and the next year settled central Sweden, SW Finland and coastal Estonia.

Dardanus Lake formed in 1445 BC from an abrupt 2.9 m rise above sea level, initiated by a flood, caused by a turbidite, loosened by a meteor strike. The sky changed and a new calendar had to be invented. The flood began as a tsunami from a turbidite off the coast of Texas that drowned the Mississippi Valley. Dardanus Lake lasted 325 years to 1120 BC while an outlet slowly eroded down to sea level to form the Baltic Sea.

Dardanus founded Dardania, which became Troy, a great city that dominated the eastern Baltic from 1430 to 1190 BC. Other major trading centers on the lake included Athens, Thebes, and Gdansk. Achaeans in Denmark and Sweden vied for control of shipping of metal, amber, furs, salt, tar, paint, tools and battle gear.

Baltic Sea has lasted 3100 years, from 1120 BC until today. The sea near Perniö has no tide, tastes slightly brackish and is opaque due to a dark red algae bloom. Consequently, almost no shipwrecks have been recovered because of limited visibility.

8365 BC: the end of Baltic Ice Lake II coincided with the end of Middle Stone Age

A 25m catastrophic drop in the Baltic Ice Lake in 8365 BC coincided with the end of the Middle Stone Age in Europe, when northern Europe was struck by a large, disintegrating fragment of Comet Cluster Encke. Multiple impacts scorched the land, melted the ice sheet, flooded the Baltic, and left a tell-tale spike of ammonium in GISP2 ice core from Greenland. Pollen cores throughout Europe show a spike in carbon followed by a complete absence of carbon. When growth resumed, many species had disappeared, including all animals. New people gradually spread across the land from the east and south. They employed a New Stone Age tool kit and planted billions of oak trees for their pigs, the only domestic animal that can safely eat acorns.

6405 BC: the end of Ancylus Lake

Voluspa, the oldest part of Norse mythology, recounts a catastrophe that ended Ancylus Lake in 6405 BC (8354 BP) and predicts another like it, to be called Ragnarok. It was recited to Odin by his first wife, Urð (pronounced 'earth'), Vala of the Past, mother of Thor. In verse 3, she calls the

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Baltic by the name *Kinnunka*, meaning 'sea with boats having prow and stern extensions of the wooden keel'. 'Heaven' originally meant the highest part of an island.

Twas the earliest of times when Ymir lived;
there was not sand nor sea nor cooling wave.
Earth had not been, nor Heaven on high,
trade lacked Kinnunka and nowhere was there grass.

After lake level dropped, new islands emerged; one of these was called Earth, where Odin, Freya and the rest of the Aesir and Vanir lived. Just north, across a shallow channel, was the island Niflheim where Ymir and his giant clansmen lived.

5608 BC: the creation of Ymir Lake coincided with the Flood of Ymir

The radiocarbon estimate of 5600 BC for the abrupt beginning of Ymir Lake agrees with a comet strike in 5608 BC (7557 BP), recorded as a spike in NH₄ in GISP2 ice core. All three lakes began with a flood; perhaps a landslide from earthquakes or lava from a volcano dammed the outlet. In Norse mythology, the death of Ymir created Earth: his blood the sea, his bones the land, his eyebrows the pine trees. The sky had shifted and required a new calendar.

3161 BC: the creation of Noah Lake coincided with the Noachian Flood.

The radiocarbon estimate of 3160 BC for the creation of Noah's Lake matches 3161 BC, the year of Noah's flood, which in turn was triggered by a meteor strike. The sky had shifted and required a new calendar. Emilio Spedicato of the University of Bergamo established the date of the Noachian Flood by two independent means:

Genesis says the Noachian Flood occurred 600 years after the birth of Noah, whose birth date is set at the start of the old Hebrew calendar, 3761 BC.

The Toltecs said that 1716 years passed between the end of two worlds, which were destroyed by tremendous rains and lightning from the sky.¹ If the second was the Biblical Exodus in 1445 BC, which North America experienced as a stupendous flood, then the first was Noah's flood in 3161 BC².

¹ On his web site "Wyatt Archaeological Research", Ron Wyatt quotes the Toltec flood information. In the first half of the 1500's, the Aztec chieftain Ixtlilxochitl wrote "Ixtlilxochitl Relaciones", a history relating the archives of his family and the ancient writings of his Aztec nation. He claims descent from the Toltecs, who passed down the following tale.

"It is found in the histories of the Toltecs that this age and first world, as they call it, lasted 1716 years; that men were destroyed by tremendous rains and lightning from the sky, and even all the land without the exception of anything, and the highest mountains, were covered up and submerged in water "caxtolmolatli" (translated to read "fifteen cubits"); and here they added other fables of how men came to multiply from the few who escaped from this destruction in a "toptlipetlocali;" that this word nearly signifies a close chest; and how, after men had multiplied, they erected a very high "zacuali", which is to-day a tower of great height, in order to take refuge in it should the second world (age) be destroyed. Presently their languages were confused, and, not being able to understand each other, they went to different parts of the earth....

² The estimated date of Exodus has decreased from 1447 BC fifty years ago to 1446, then to 1445 BC due to subtle refinements of the start of Solomon's reign. In addition, 1445 BC was the year of a spike in the size of particles that fell from outer space onto the Greenland ice sheet, thus matching the plague of falling cinders.

1415 BC: the creation of Dardanus Lake coincided with the Flood of Dardanus

The Flood of Dardanus in 1415 BC originated as a tsunami caused by a turbidite off the coast of Texas, which in turn was triggered by a meteor strike. This flood is coincident with Passover, dated most recently as 1415 BC. The sky had shifted and required a new calendar. After the flood ruined his farm in Sweden and drowned his first wife, Dardanus returned to his mother's farm in Finland with one son and worked as a smith. Soon afterward arrived a group of Trojan warriors, called Turjans in Kalevala, who settled at Pohjola meaning North Farm. Led by Prince Scamander, they represented one third of the only Cretans to survive a direct hit on Crete and Turkey in 1415, because they were living at Cappadocia and were able to hide in the underground city. Seventeen years later, Dardanus married Bateia, the eldest daughter of Scamander and Leucippe. Together they founded Dardania, which later became Troy. His memorial cairn occupies the peak of an islet south of an island called Lemun-Lemnos, 10 km east of Perniö.

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matched a hundred names with places, in sequence. The Achaean heartland was Denmark and the Trojan heartland was Finland. Odysseus lived on the island of Lyø, Agamemnon at Copenhagen, and Hector half way between Turku and Helsinki, near Perniö.

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