

Raised beaches

The edge of the continental glacier retreated from Lapland westwards to Sweden about 10,000 years ago. Because the earth's crust under the ice sheet had been pushed into a hollow, most of South-west and Southern Lapland remained covered by the ancient Baltic lake called Ancylusjärvi. The isostatic uplift begun under the thinning ice sheet continued rapidly. It was quicker in the south-west than elsewhere in Lapland. The highest beach is on Vammavaara Hill south of Rovaniemi, at an altitude of some 219m above sea level. From there, it descends towards the north and east, and at the mouth of the Äkäsjoki River at Kolari, for example is only 168m above sea level.

The waves washed the slopes of the hills and, with the winter ice, carried and rounded the rocks and boulders, forming them into beach cobble deposits and embankments. Gravel and sand was transported down and deposited on the hill slopes, with fine silt and clay going further down to the valley floor.

In Southern Lapland, the tops of only the highest hills rose up as islands above the surface of the water. In the southern parts of the archipelago, which then existed, the waves washed the hillside beach areas clean, either wholly or partially. A moraine calotte was left on the upper reaches of the hills, untouched by water, which was distinguishable in the landscape by its more lush vegetation.

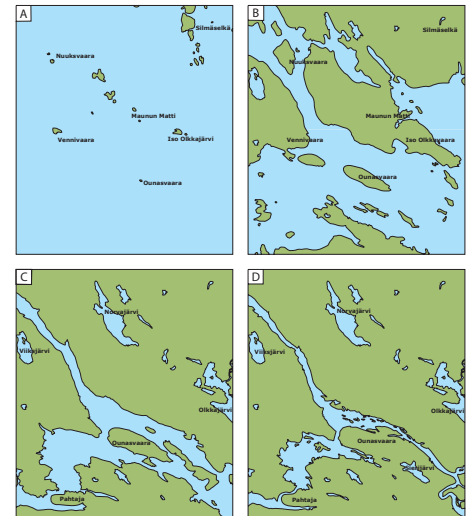
In the area of Rovaniemi, the highest beaches (213-215m) are at Ounasvaara Hill, Maunu Matti, Olkkavaara Hill, Santavaara Hill and Vennivaara Hill. As a consequence of isostatic uplift, beach deposits were also created on the tops and slopes of lower hills.



A raised beach on Ounasvaara Hill, nowadays about 202m above sea level.



Aavasaksa Calotte at Ylitornio.



Isostatic uplift stages in the area of Rovaniemi. The green areas are dry land and the blue areas are water-covered regions.

A= Highest beach, approx. 213m (Ancylusjärvi Lake, 10,300 years ago)

B= Water surface approx. 120m (about 9,100 years ago)

C= Highest beach of the Litorina Sea, approx. 90m (7,800 years ago)

D= Water surface approx. 80m (7,200 years ago)



Raised beach of rocks and boulders at Pisavaara.



Beach deposits on a hill slope. Almost all the sand and gravel has been carried away.