A changing landscape

For centuries, Mekelermeer lay nestled in an immense moorland landscape, squeezed between the Groteveld, Mepperveld, and Geeserveld. Only shepherds and peat diggers could navigate their way. For many centuries the moorland was necessary as grassland for moorland sheep and cattle, especially to provide fertilizer for agriculture. Following the discovery of artificial fertilizers, this type of fertilizer was no longer needed, and so vast expanses of moorland were turned into agricultural land or woodland. On the western side of Mekelermeer moorland and peat disappeared, to be replaced by outstretched fields. On the eastern side trees were planted to create the Gees woods. Immediately to the east of Mekelermeer there is a small piece of moorland that gives an impression of the old landscape. Along one side of the Gees woods is an example of a much bigger area of moorland, the Hooge Stoep.

Het Mekelermeer, 1990, Paul Paris

Ter Steege Family Archive,1965

Management and restoration

Staatsbosbeheer (the Dutch forestry commission) has restored a large part of Mekelermeer to its old state and improved the water management. This has resulted in a raising of the water table and so no water contaminated with fertilizers can flow into the peat. Grazing animals ensure that the moorland plants do not grow too densely, thus leaving space for small sundew, tormentil, and bell heather to flourish. It is no longer a place where swimming and fishing is permitted. The resultant tranquility enables nature to develop to the optimum. The lake's surroundings are rich in butterflies, such as the silver-studded blue, and the large skipper. The European stonechat is a typical moorland bird that breeds here. Visitors are able to cycle or walk through this ancient landscape. Perhaps they will come across one of the unusual breeds of birds that migrates over here for the winter months, such as the osprey and great egret.

Large skipper

Highland cattle

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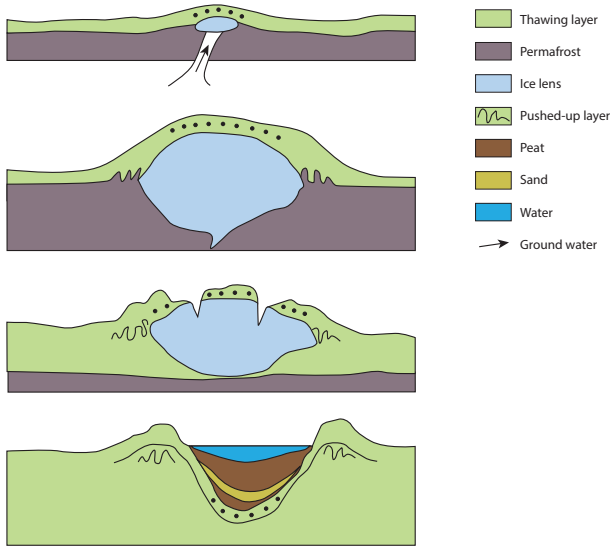
Het Mekelermeer

The Dutch Province of Drenthe boasts the highest density of pingos anywhere in the world. North of Nieuw-Balinge, in the shade of the Gees woods, lies Mekelermeer (Lake Mekeler) one of the largest pingo lakes to have formed on our national landscape since the last Ice Age. This is living, breathing history that teaches us about ice, farming, and land use.

On 1 October 2015 Mekelermeer was designated a geographical landmark of Drenthe.

Unusual history

Approximately 200,000 years ago, the Saalian Ice Age saw a thick layer of ice spread slowly from Scandinavia down across Drenthe. With the ice came huge quantities of sand, grit, and rocks, eventually pulverized by the ice into a thick seem of boulder clay. 80,000 years later appeared the second – Weichselian - ice age. This time the ice sheet did not reach down to our country, but the temperatures were cold enough for the uppermost layer of earth to become permanently frozen. Ice lenses grew underground as a result of the flow of ground water that then froze. Over time the ice lens slowly pushed the ground apart and upwards to create a hill, which is what we today term a 'pingo'. As the temperature began once more to climb, the ice melted and a dip in the land became filled with water, creating a 'pingo lake'. Mekelermeer is a perfect example of a pingo lake created approximately 14,500 years ago.



How the pingo lake of Mekelermeer was created

Peat and water

Mekelermeer, together with Uddelermeer in the Veluwe and Esmeer in Drenthe, form one of the few large pingo lakes to have formed part our landscape since the end of the last Ice Age. Mekelermeer is a perfect example of the phenomenon, having a diameter of approximately 200 metres and a depth of 12 metres. The lowest six metres is made up largely of a layer of mud and peat, a testimony to the last 14,500 years of history. In the acidic, nutrient-poor water at these depths sphagnum flourished. The residue of dead sphagnum and other plants created thick layers of peat around Mekelermeer. Peat, once cut and dried out, provided an excellent fuel source and was ideal for large-scale digging. Over the last 400 years, therefore, some of the peat layer has been dug up.

Sphagnum

Ter Steege Family Archive,1970

Surprising research results

The mud at the bottom of the lake records changes in our landscape, such as the evolution in plant life from tundra to forest, the arrival of agricultural crops and various elements of contamination. The largest part of this layer, a geological and archaeological archive, still remains in the layer of mud. Microscopic investigation has brought to light a lot of information about the history of the peat. The remains of the leaves of arctic willows and dwarf birch that grew on top of the pingo 14,500 years ago have been discovered. This was followed by forestation, recognizable from the remains of pollen in the mud layer. Later on, farmers began cultivating the environment, so that we see a slow but sure increase in pollen from cultivated crops introduced by the farmers.

The remains of dwarf birch leaves under the microscope

Research by the Physical Geography Dept. of the University of Utrecht