



Katla Geopark: An Educator's Guide and Worksheets

Geology and history



Landbrotshólar – Rootless Cones (Pseudocraters). Teaching Instructions

Landbrotshólar formed in the Eldgjá eruptions during 934–940. A part of the lava flowed over wetlands and formed rootless cones (pseudocraters), in the Landbrot and Álftaver regions. The Eldgjá lava consists of pahoehoe lava, which is fluid lava that flows in lava tubes under the surface. Major eruptions such as the Eldgjá and Laki eruptions can often flow long distances from their point of origin inside these tubes. The Eldgjá lava, for instance, travelled more than 70 km from its source. In some places, the lava exits the tubes and forms offshoots in which new lava tubes form. If the surface is stable, the offshoots thicken, the new lava tubes become extensions of the earlier ones and the lava continues to spread. If the surface is unstable, such as wet sediment layers or wetlands, the bottom crust breaks when the lava offshoot thickens and becomes heavier. In such cases, the red hot lava flows directly into the watery ground, resulting in spectacular steam explosions. The magma explodes upward in lava flakes and tephra that builds up on the surface and forms rootless cone. The explosions prevent more lava from flowing through the lava tube, the flow alters course and the process repeats itself; new lava tubes and new rootless cone form. The first material ejected is usually very rich in soil and substrate materials, but later in the eruption, lava flakes and scoria fragments become more pronounced. As there is a large amount of water in the soil, the scoria hills build up, but where there is less steam, scoria cones are created, and the craters are smaller and the hills are often conical. This is what has happened here until the lava covered an extensive area of wetlands and formed a cluster of rootless cones.

The Landbrotshólar area was well suited for winter grazing, not least due to the climate, landscape and vegetation. Adult sheep were not given much feed during winter in earlier times and were expected to fend for themselves for much of the winter. There are several species of subshrubs growing on the hills that sheep could take advantage of during winter. Tunguskjól is a good example of the manner in which the people living in the Landbrot area took advantage of the hills. An opening was made into the rootless cones and they were used as shelters for the sheep. There are many such shelters in the Landbrotshólar area, and Tunguskjól, for instance, was used well into the 20th century. Other such sheep shelters are Kársstaðaskjól, Runkaskjól and Grænaskjól (skjól in Icelandic means shelter).

