



KATTEGATT

SKÄLDERVIKEN

ÖRESUND

MÖLLE

MÖLLEHÄSSLE NATURRESERVAT



Geological itineraries

Kullaberg. A place where the Earth, the living planet that is our home, tells us the story that was written on its rocks billions of years ago. They, as silent witnesses, will reveal us today the secrets of what happened in those ancient times. To unveil them we will give you three short itineraries. Come with us and discover the rockiest history of Kullaberg!

- 1 Itinerary 1. Inside the depths of the mountains. Following the traces of pressure and heat
- 2 Itinerary 2. A natural treasure emerges from the depths of the Earth
- 3 Itinerary 3. Like a sculptor and his work. The ice at Kullaberg

KULLABERG NATURE RESERVE

1:30,000
SVEREF 99

Digital Elevation Model: © Lantmäteriet

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Cartographic Design © Naturamap

- Main southern trail
- Main northern trail
- Connection trails
- Skåneleden SL5
- Geological itineraries
- Restaurants | Cafes
- Sight
- Viewing point
- naturum Kullaberg
- Bird protection area, no admittance 1/3-15/7
- Möllehässe Nature Reserve

Parking
 WC | Toilet facility
 Picnic area
 Camping

Foothpath
 Forest road
 Cart track
 Road

Restaurant | Cafe
 Sight
 Viewing point
 naturum Kullaberg

Bird protection area, no admittance 1/3-15/7
 Möllehässe Nature Reserve

342000

344000

346000

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ABOUT THIS ITINERARY

Taking a walk inside the depths of a mountain chain is possible at Kullaberg. Let us guide you through the peninsula's most famous rocks and discover the traces of the high pressure and temperature that engraved the rocks kilometres deep.

When the first forms of life were still developing on the Earth's surface, a primitive continental collision would result in a large wrinkle in the crust: a mountain chain. Only the rocks that were formed in the depths of this mountain chain remain and **these are the gneiss and the amphibolites of Kullaberg.**

Going down towards Silvergrottan, you will find the final clues to follow the traces of pressure. Let us introduce you to the famous gneiss of Kullaberg.

- **Grey quartz grains** normally round are stretched appearing as tiny grains of rice (image ¹).
- **Hornblende**, a dark mineral almost black that has an elongated shape and turns the rocks into a pale pink colour with grey undertones (image ²).
- Minerals grouped to create a mineral banding of dark (hornblende) and light (**quartz and feldspar**) bands (image ²), and that are arranged perpendicular to the direction in which the pressure took place.

When those primitive continents stopped pushing against each other ceasing compression, the newly formed mountain chain would finally relax and stretch in the opposite direction to compression. Is this not what happens when you press a spring between your fingers and you suddenly stop doing it?

When that happened, the non-elastic gneiss would fracture intensely. Through the cracks ascended the magma that would finally transform into the amphibolites of Kullaberg.

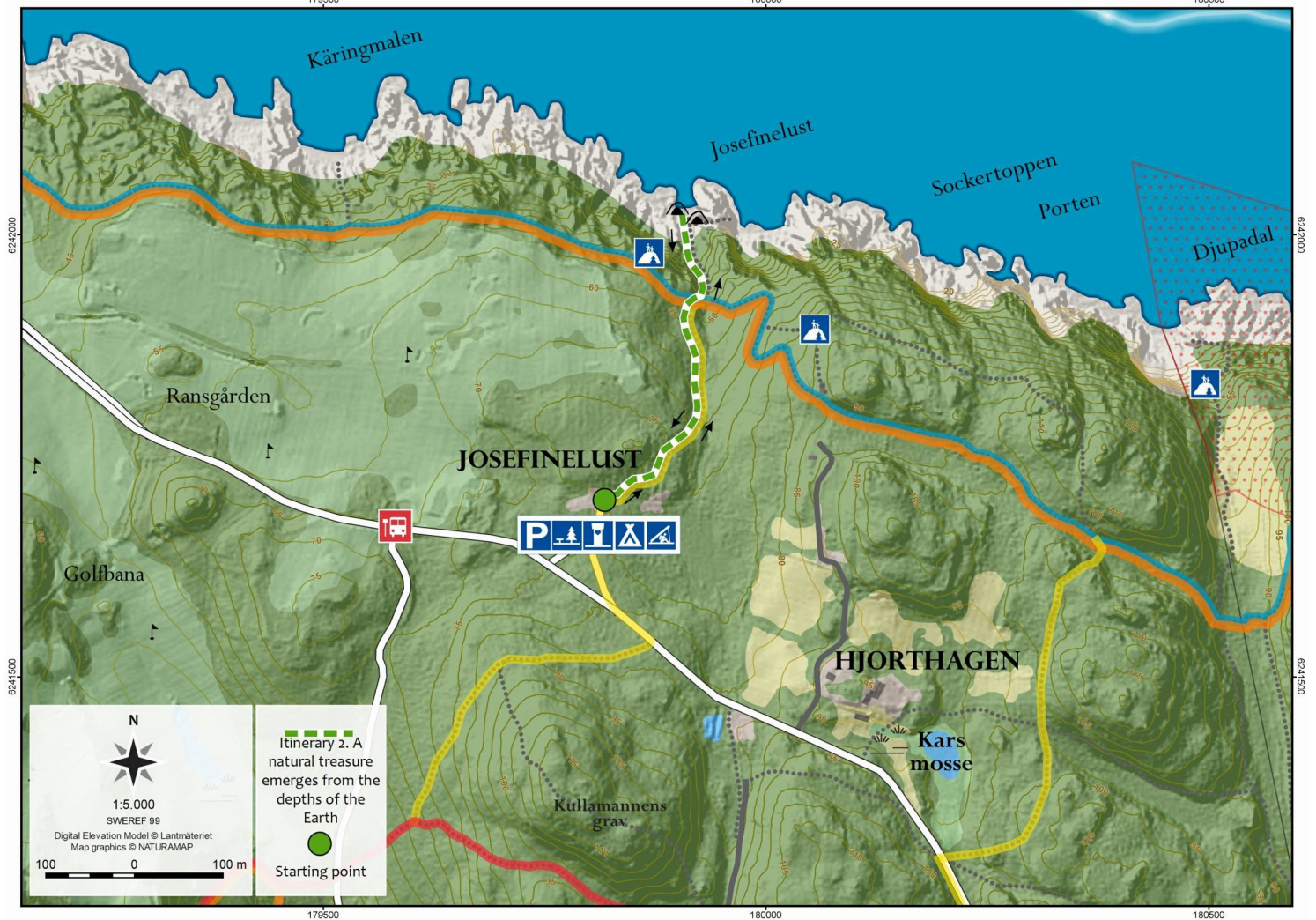
As you get closer to the sea you will find yourself walking on a wide strip of dark rocks, almost black. These are now the footprints of the heat, the amphibolites that go through the peninsula north-to-south as intercalated bands (image ³).

When you get to Silvergrottan you will be reaching the end of our walk inside the depths of the mountains that were once Kullaberg. Perhaps now you would like to take a bath in the crystal clear waters of the Reserve. If you do, do not stop looking for amphibolites! They happen to be in almost every beach of Kullaberg! We recommend visiting Josefinelust, where you also will be able to continue discovering the rockiest history of Kullaberg!

Above the entrance of Silvergrottan (image ⁴) you will see a rock with big white (plagioclase) and silver (mica) crystals, but the rest of it is missing inside. During the 16th century, the Danish government extracted the rock when its gleam made them believe it was true silver. Imagine their disappointment when they realised it was only mica mineral and that it had no economic value!

TYPE	Lineal itinerary
DURATION	1 hour
LENGTH	1.620 meters <i>round trip</i>
TOPOGRAPHIC ELEVATIONS	1 masl - 62 masl
ABSOLUTE SLOPES	min: 0 % max: 80 %
DIFFICULTY LEVEL	Medium-high
INTENSITY	Medium





ABOUT THIS ITINERARY

Long after its formation, erosion acted on the primitive mountain chain, destroying it and making it disappear almost completely. However, its roots —gneiss and amphibolites— remained buried kilometres deep. You might be wondering how they reached the surface?

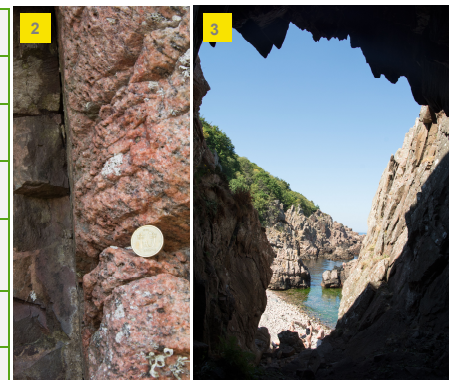
Josefinelust is a small stone beach surrounded by pink gneiss that goes into the sea.

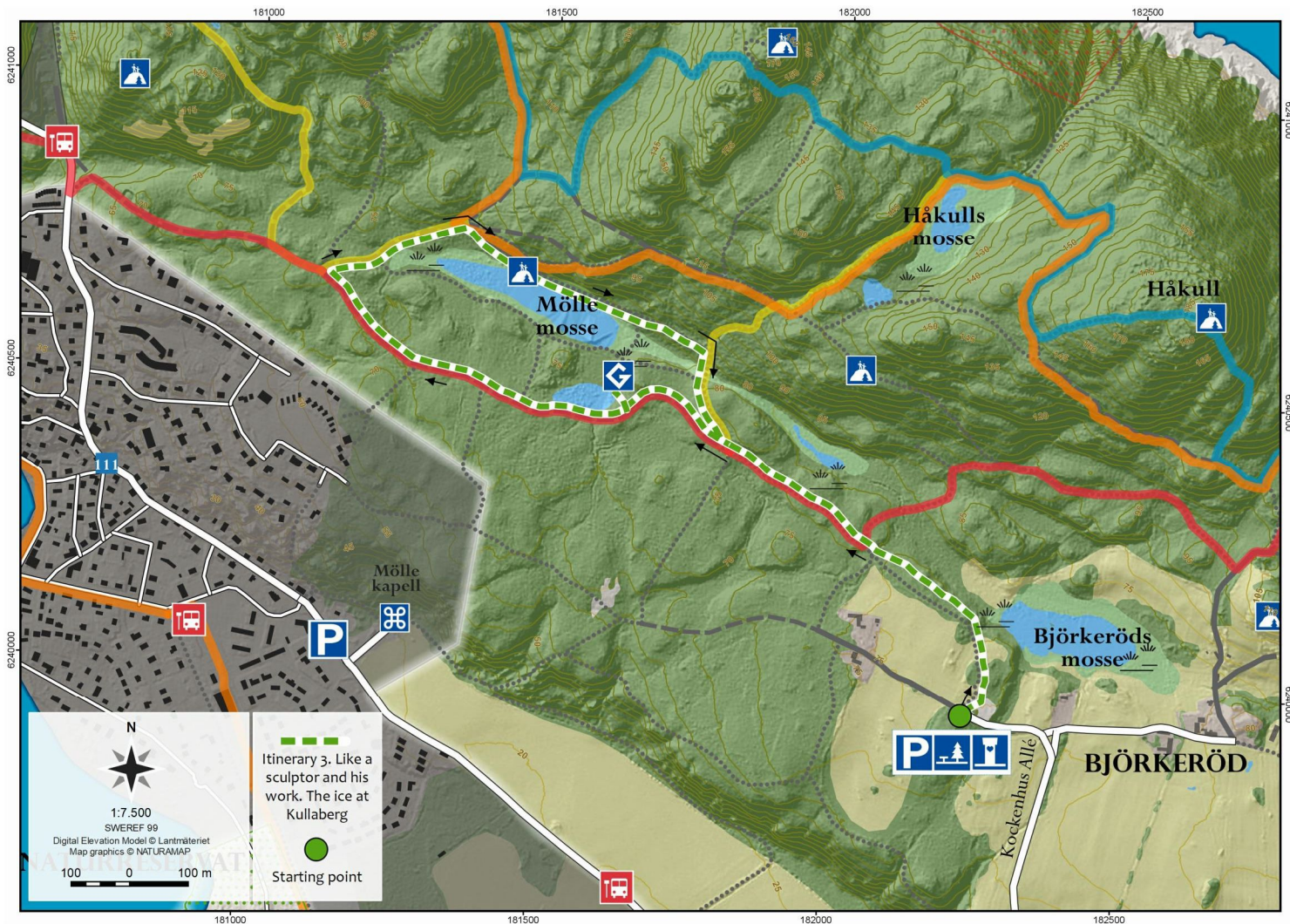
If you leave the trail behind you, on your right you will be able to see a wall of gneiss with a perfect mineral banding, only interrupted by the appearance of a new rock. This is a diabase dike (image ¹). This maroon rock, locally known as kullaite, has clear limits perpendicular to the arrangement of the gneiss' mineral banding (image ²). All this reveals that its creation happened after the formation of the gneiss. Also, the dike reappears on the left side of the cove, and it goes all across the peninsula cutting it like a knife but this time from east to west.

A second chapter of the extensional movements took place millions of years later. This is when gneiss and amphibolites cracked and once again the magma was positioned, giving rise to the diabase rock once it got cold. At this time, volcanoes existed on the surface and dinosaurs populated the Earth! Kullaberg found its way to the surface and took advantage of the previous cracks to rise over the Kattegatt sea. Thus the ridge of pure rock that is today the majestic peninsula of Kullaberg managed to emerge from the depths of the Earth to eventually be sculpted and modelled on the surface.

At Josefinelust you can visit three caves out of the more than twenty that are located all around the cliffs of Kullaberg. The most accessible one is on the right side of the beach (image ³), close to the diabase dike. Its location, just like the other caves, matches the fracture concentration in the gneiss or the appearance of diabases, which are much less resistant to erosion than the surrounding gneiss.

TYPE	Lineal itinerary
DURATION	45 minutes
LENGTH	800 meters <i>round trip</i>
TOPOGRAPHIC ELEVATIONS	1 masl - 75 masl .
ABSOLUTE SLOPES	min: 0 % max: 65 %
DIFFICULTY LEVEL	Medium
INTENSITY	Medium





ABOUT THIS ITINERARY

Through this itinerary you will go back to the coldest times and you will have access to the most unique footprints that ice once engraved in Kullaberg.

Welcome to the Ice Age!

The waves from the sea sculpt the rocks at the cliffs of Kullaberg. The uprooted blocks fall into the sea, where the continuous clashing between them rounds the blocks perfectly. Listening to the constant cooing of the process is possible at the beautiful beaches of the Reserve. However, the sea has not always been the sculptor of this prominent ridge, nor the waves his chisel. A few thousand years ago a large mass of glacier ice covered Kullaberg and it was the artist in charge. Just like the sandpaper polishes the wood, the ice softened the irregular shapes of rocky Kullaberg leaving it ready for the vegetation to take its place slowly.

When you walk from Björkeröd's parking lot towards Mölle mosse through the red trail, the beautiful beech trees appear very close from one another on your left, yet more separated on your right. This is when the forest becomes thinner creating a magical atmosphere. The shadow created by the tallest trees, keeps the sunlight from reaching the ground and thus clearing the view from bushes and young trees, allowing you to see the soil under your feet! This is when you will discover some mysterious rocks, alien to Kullaberg. They are sandstone blocks, a rock that is formed by small crystals of white-grey quartz that shine when they are not covered by lichens. These blocks can reach a height of one meter and are known as travelling blocks or erratics (image¹). This is because the ice mass transported them inside from a faraway land during the last glaciation.

About 17.000 years ago, when the ice prematurely melted at north-western Scania, the erratics were left behind on the ground of Kullaberg, where they are eagerly waiting for you to come and visit them.



DID YOU KNOW...?

In close relation with the end of the Ice Age, the sea rose until it reached tens of metres above the present sea level.

Scientific analyses of the sediments from Mölle mosse (image²) reveal that this marshy depression was flooded (and so was Björkeröd's depression), leaving the Kullen peninsula secluded from the rest of Scania at its eastern end, temporarily turning Kullaberg into an island in the middle of the Kattegatt Sea.



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