

Eshaness Coast

Information Sheet



Location: ESHANESS COAST

Conservation designations: Eshaness Coast SSSI, Eshaness Coast GCR, Shetland National Scenic Area

Grid reference: HU206784 (British National Grid)

Address: Eshaness Lighthouse, Shetland

Parking available: Yes – at Eshaness Lighthouse

Personnel to be contacted prior to visit: N/A

Useful equipment:

- Binoculars
- Camera
- Stationery

Relevance national curriculum:

Rock types and geological processes observed: Lava, tuff (volcanic ash), agglomerate, ignimbrite, andesite and rhyolite.

Geological structures: Lava flows and lava domes

Earth processes: eg. Volcanic eruption producing a sequence of Devonian lava and pyroclastic flows, coastal erosion, subduction, plate tectonics

Geological periods present: Devonian and quaternary

Site specific hazards and risks:

- Uneven ground
- High winds and changeable weather can make conditions challenging
- High cliffs
- Loose rocks

Mitigation measures:

- Wear sturdy footwear and windproof/waterproof clothing
- Stay well away from cliff edges, particularly in adverse weather

Did you know:

Topics to cover before visit: Plate tectonics, Rock classification, rock cycle, igneous rock processes and coastal erosion

Keywords: Volcano, pyroclastic flow, agglomerate, tuff, ignimbrite, rhyolite, andesite, lava dome, agate, amagdayles, vesicles, subduction, folding, tilting, caves, stacks, blowholes and geos



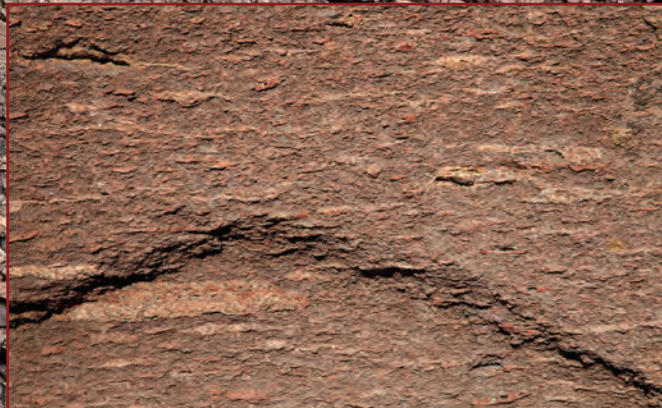
Agate



Agglomerate



Andesite



Ignimbrite

Geological history*:

As the Iapetus Ocean slowly closed, subduction of the ocean floor caused huge volcanic eruptions. The cliffs of Eshaness expose rocks that were produced by these volcanic eruptions, some 360 million years ago. The lowest rocks in the sequence are ignimbrites - rocks that formed from an extremely hot, dense cloud of semi-molten globules of lava which fused together when they settled. These rocks are rhyolite.

Between the Grind o da Navir and Drid Geo, the cliffs are made up of several thick sheets of andesite, a type of lava. These contain cavities called vesicles, formed by gas escaping from the lava as it solidified. In some cases, these have filled with crystals to form agates.

Around the lighthouse, agglomerates are exposed, composed of coarse fragments of volcanic rock, bound together in a finer-grained matrix. Explosive eruptions would have blown this material of varied sizes into the air, before it settled in jumbled layers a short distance from the volcanic crater.