

North Skye 5:

Rubha nam Brathairean



Rubha nam Brathairean (Brothers' Point) provides a spectacular vista of the east coast of Trotternish and across the Sound of Raasay to the northern end of Rona (Ronaigh). The area comprises outcrops of dolerite sills and Middle Jurassic (Lealt Shale Formation) strata juxtaposed in a complex manner. There is evidence of its use as a settlement, possibly by monks (the 'brothers') in the First Millennium. The most easterly point is easily reached with just a modest scramble and is the site of Dùn Hasan, an Iron Age (800BC – 500AD) fort. Nearby, there is evidence that this was where quern stones were extracted: stones used to grind grain into flour. In more recent times, the coast at Port Earlish was a salmon station, where fish were landed, salted, and dispatched to market.

Aspects covered: Middle Jurassic sedimentary rocks; Palaeocene dolerite sills.

Route: [Culnacnoc](#) – [Port Earlish](#) – [Sgeir Gharbh](#) – [Dùn Hasan](#) - [Rubha nam Brathairean](#) (- return [Culnacnoc](#)).

Distance: 4 kilometres.

Time: 3 hours.

General comments: This is a very easily accessed excursion, with a good approach from the public road. The views are spectacular, especially in the early morning light. Low Spring tides are essential.

Parking is available on the west side of the main Portree-Staffin (A855/A835) road c. 250m north of the road junction to [Grealin](#). This road junction is 21km (13 miles) north of [Portree](#). Return south towards the road junction. Just to the north of the road junction, on the east side of the road, is the signposted (with gates) track to [Rubha nam Brathairean](#) (Brothers' Point). Continue east and follow the path as it sweeps to the right (south) and then downhill through grazed land to [Port Earlish](#). All of the rocks from [Port Earlish](#) east across [Sgeir Gharbh](#) to [Rubha nam Brathairean](#) are either part of the Middle Jurassic Lealt Shale Formation or a Paleocene dolerite sill. The horizontal shale-limestone sequence of the Lealt Shale

Formation is obviously bedded and most of the sills have well-developed prismatic joints orthogonal to their margins (i.e. cooling surfaces), so can be readily distinguished. As the sedimentary sequence is almost horizontal and the sills were (on a broad scale) intruded parallel to bedding, the prismatic joints tend to be vertical. Only where a sill cuts through a bedding surface do the joints become inclined, away from the vertical.

Due to the near-horizontal dip of these rocks, it is considerably more instructive, and easier to find key features, to first walk out to [Rubha nam Brathairean](#), to take the view, and to then traverse back to the access path.

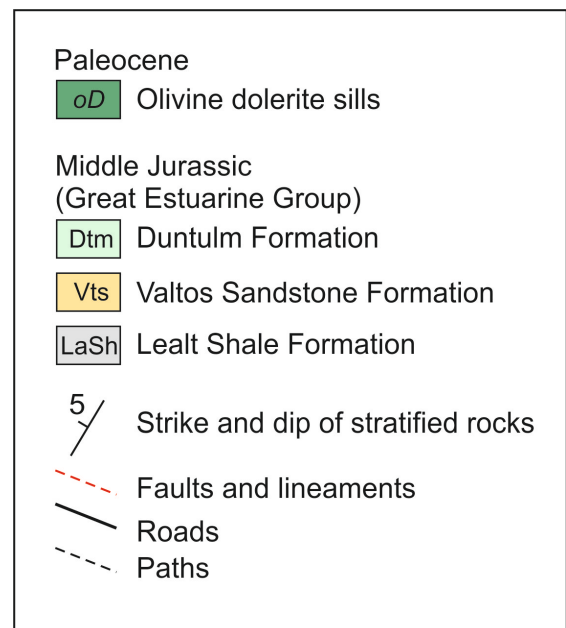
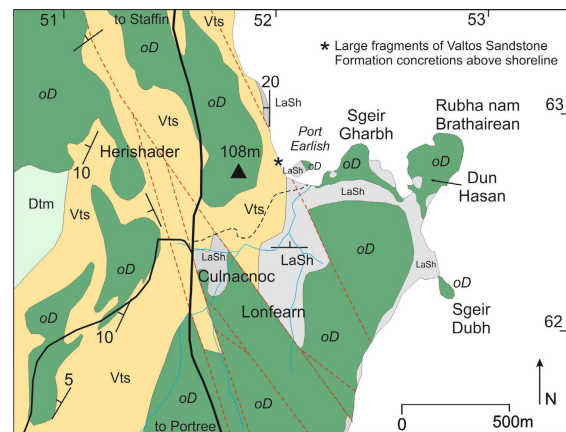


Figure North Skye 5.1: Location map and key for the Rubha nam Brathairean (Brothers' Point) area.

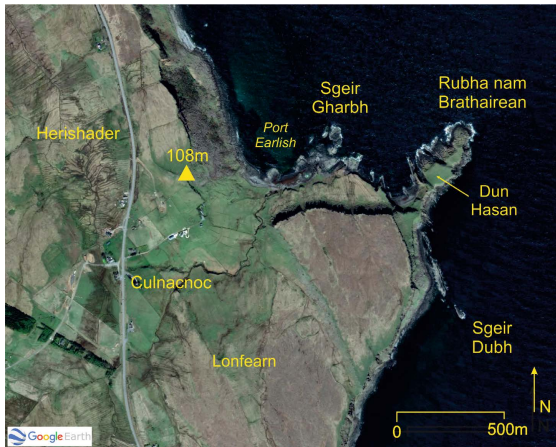


Figure North Skye 5.2: Annotated Google Earth® image for Rubha nam Brathairean (Brothers' Point).

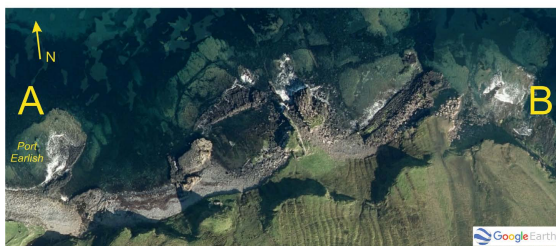
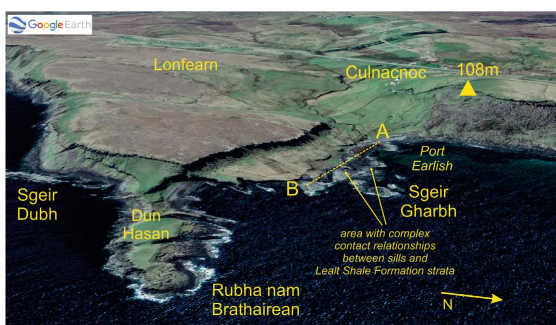


Figure North Skye 5.3: Annotated Google Earth® images for Rubha nam Brathairean (Brothers' Point).

En route, there is a useful information board for [Rubha nam Brathairean](#) (note different spelling, there are various versions on maps and in books).

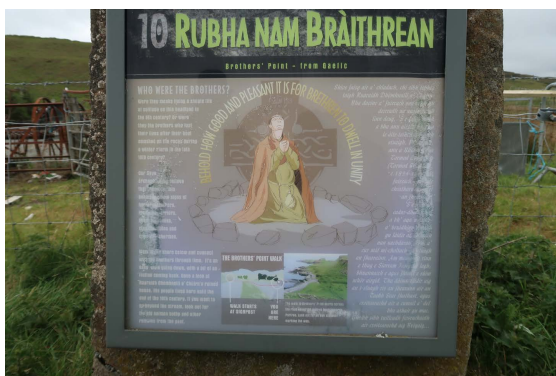


Figure North Skye 5.4: Information board for Rubha nam Brathairean.



Figure North Skye 5.5: Information board for Rubha nam Brathairean.

Locality 1 [\[NG 5182 6252\]](#):

On the path to the shore there are minor exposures of the Middle Jurassic Valtos Sandstone Formation of the Great Estuarine Group. These locally cross-bedded deltaic sandstones overlie the lagoonal shales and limestones of the (Middle Jurassic) Lealt Shale Formation that dominate the shoreline exposures around [Rubha nam Brathairean](#). Valtos Sandstone Formation strata commonly contain large (metre-scale) carbonate concretions, formed during burial and diagenesis. Some of the boulders above the high-water line on the west side of [Port Earlish](#) are of such concretions.



Figure North Skye 5.6: Middle Jurassic Valtos Sandstone Formation strata on the access path to Port Earlish. Pole is c. 1m long.

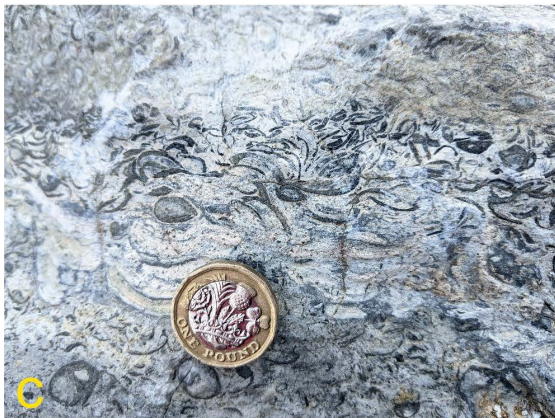


Figure North Skye 5.7: Details of Valtos Sandstone Formation strata (all from boulders on east side of Port Earlish above high-water line): (a) Concretion boulder,

pole c. 1m long; (b) shell-poor (upper) and shell-rich (lower) layers, coin c. 24mm across; (c) shell-rich bed, coin c. 24mm across; and, (d) carbonate crystals lining a cavity (vugh) within a concretion.

Much of this shale-limestone sequence in the [Port Earlish – Sgeir Gharbh - Rubha nam Brathairean](#) area is intruded by Paleocene dolerite sills, with complex, locally-variable contacts, instructive as to how magma is emplaced into sedimentary sequences. Uncommon Paleocene dolerite dykes are intruded into the sequence.



Figure North Skye 5.8: NW-SE -trending dolerite crag south of Port Earlish. The comparatively soft Lealt Shale Formation strata, into which the sills were emplaced, are typically not exposed inland. View is towards the SE from the access path to Port Earlish.

Continue down to the shore at [Port Earlish](#). Here, the view opens out to reveal the near-horizontal shale-limestone sequence intruded by sills. However, some of the key sections are not readily identified and are best located upon the return (west facing) traverse. One view that is worth taking in is that to the north, to the [Kilt Rock](#), formed by a horizontal Paleocene dolerite sill intruded into strata of the Valtos Sandstone Formation. The name is derived from a similarity between the vertical prismatic joints in the sill and the pleats of a kilt. The stratigraphic section where the waterfall has developed is different to that at the [Kilt Rock](#), giving a sense of the lateral complexities of the relationships of the sills with their host rocks.



Figure North Skye 5.9: View towards the NE of Port Earlish, Sgeir Gharbh and Rubha nam Brathairean from the access path to Port Earlish.



Figure North Skye 5.10: View towards the NE of Sgeir Gharbh.



Figure North Skye 5.11: View towards the NE of Sgeir Gharbh.



Figure North Skye 5.12: The Kilt Rock, viewed from Port Earlish, with the prismatic-jointed sill above the pale Valtos Sandstone Formation strata. Another sill crops out at sea level.

Avoiding the foreshore, keep right (south), staying on the grassy bank above the beach. Follow the path east, with the obvious crags of a thick sill to your right (south). With care, staying away from steep edges, the path turns and trends towards the NE to [Rubha nam Brathairean](#), itself. Continue along the path, up past [Dùn Hasan](#) and down the other side. Faint circular and oval circles in the grass may represent indications of past settlements. The view to the south, beyond the small nearby promontory of [Sgeir Dhubh](#), is to [Na Famhairean](#), the Giants.



Figure North Skye 5.13: Dùn Hasan viewed towards the east from Port Earlish. This view illustrates some sill-shale (J) contacts.

Weathering of the sill at [Rubha nam Brathairean](#) is commonly quite advanced, giving rise to the classic onion skin weathering (or doleritic or spheroidal weathering). Chemical weathering of these jointed rocks leads to a highly altered or decayed rock, commonly referred to as saprolite. When exposed to physical erosion, concentric layers of material spall off, giving the distinctive pattern.



Figure North Skye 5.14: The SE side of Rubha nam Brathairean. Dùn Hasan is the prominent high ground atop the remnant of a Paleocene dolerite sill. The path skirts around it on its NW (right-hand) side. View is towards the north.



Figure North Skye 5.15: The view south from Rubha nam Brathairean, along the east side of Trotternish, with prismatic-jointed sills and stratified Middle Jurassic strata.



Figure North Skye 5.16: Onion skin weathering of the Paleocene dolerite sill at Rubha nam Brathairean.

One feature worthy of note is the distinctive circular structures, typically 35-40cm across, in the dolerite on the coast. They have been the subject of some debate, first whether they are natural or man-made. There does not appear to be any simple accepted explanation that they are natural. If so, then one interpretation is that [Rubha nam Brathairean](#) was a site where querns were obtained. Querns are disc-shaped stones used for

grinding material, for example grain, to produce flour. The debate continues.



Figure North Skye 5.17: Circular features in the Paleocene dolerite sill forming the point of Rubha nam Brathairean. One interpretation is that this was the site for producing querns: grinding stones used, for example, to produce flour from grain.



Figure North Skye 5.18: Detail of the circular features in the dolerite sill forming the point of Rubha nam Brathairean.

From the high ground at [Dùn Hasan](#) there is an instructive (reverse) view NE across [Sgeir Gharbh](#) to [Port Earlish](#). At low tide, much of the ‘sequence’ of interbedded Lealt Shale Formation strata and sills is exposed. Importantly, this allows the identification and location of key sites where the inter-relationships of the intrusions and their country-rock sedimentary rocks can be examined. Access can only be safely achieved by returning west along the path to where the foreshore can be easily accessed. Below, each of the sites, 1-6, is discussed and illustrated.



Figure North Skye 5.19: View west from Dùn Hasan to Sgeir Gharbh and Port Earlish, indicating key sites to examine the inter-relationships between dolerite sills and their country-rock (Lealt Shale Formation) strata.

Bedding-parallel intrusion of magma into sedimentary sequences results in the formation of 'bridge' and 'broken bridge' structures, recognised in the coastal exposures of Trotternish, including at [Rubha nam Brathairean](#).

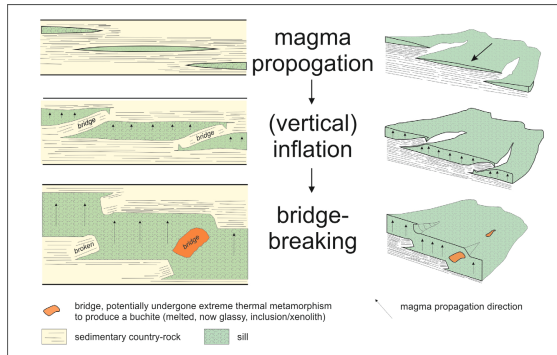


Figure North Skye 5.20: The development of bridge and broken bridge structures in sills.

Site 1:



Figure North Skye 5.21: Horizontal, interbedded, lagoonal shales and limestones, capped by a bedding-parallel dolerite sill with well-developed prismatic joints. A classic sill and country-rock relationship.

Site 2:



Figure North Skye 5.22: Leading edge of a sill injected into country-rock strata, prising a bedding surface open. This occurs during the initial stage of magma propagation and is referred to as a 'bridge.' Further injection will cause the country-rocks above the leading edge of the sill to become isolated (at least in 2D, and most likely in 3D) – a 'broken bridge'.

Site 3:



Figure North Skye 5.23: A bedding-parallel sill with vertical prismatic joints along most of the exposure. At the left-hand-end of the exposure, the cooling joints are inclined, indicating it is transgressive, i.e. cutting through bedding surfaces.

Site 4:

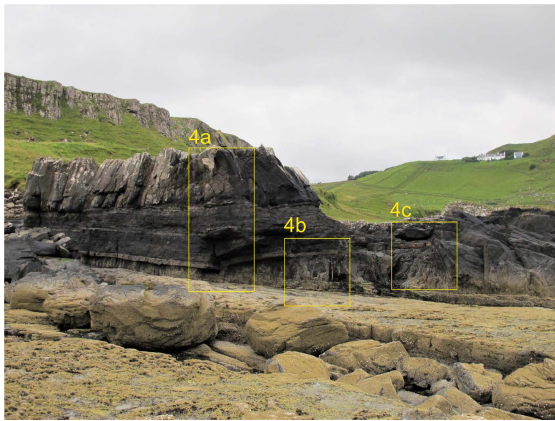


Figure North Skye 5.24: General view of Site 4 (see below). Pole c. 1m long.

Site 4a:



Figure North Skye 5.25: A fracture within the country-rock shales above the leading edge of a sill. The country-rocks at the right-hand-end of the section are inclined due to the greater thickness of sill, below. Magma was also injected into the vertical (tensile) fracture. Pole c. 1m long.

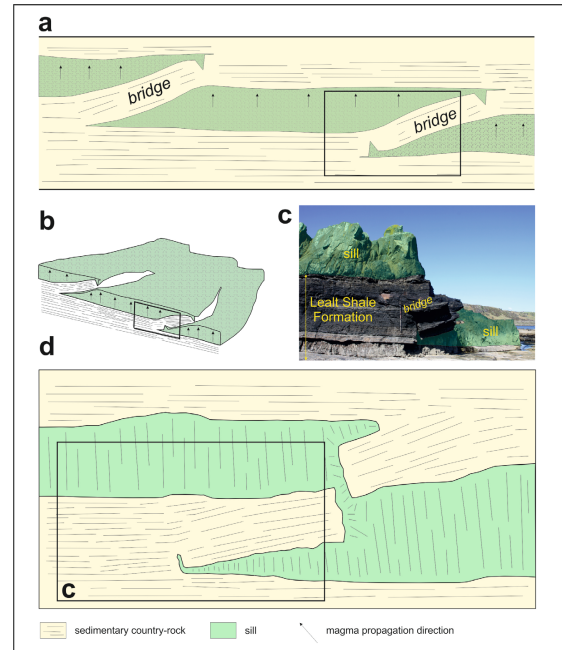


Figure North Skye 5.26: Schematic explanation of sill-country-rock relationships at Site 4a. Pole c. 1m long.

Site 4b:

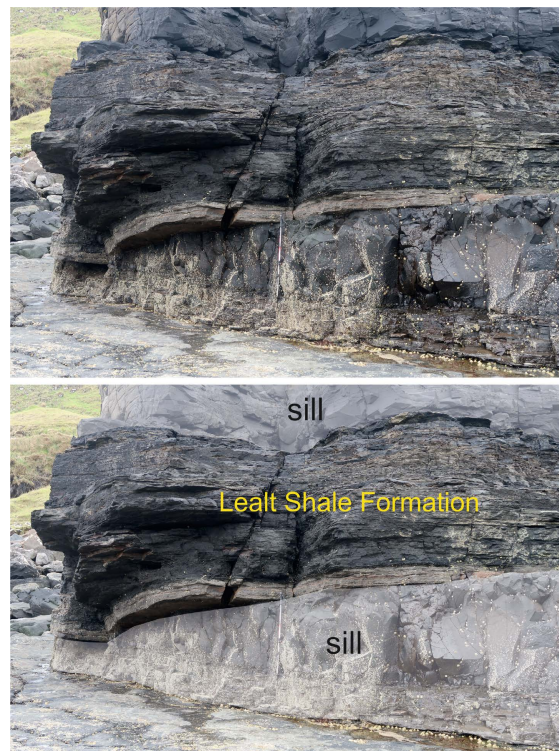


Figure North Skye 5.27: Tilting of the country-rock strata due to injection of magma along a bedding surface. The thicker the sill, the greater the dip of the country-rock strata unless, as is the case here, a tensile fracture develops in the country-rocks. Pole c. 1m long, placed on jointed sill.

Site 4c:



Figure North Skye 5.28: Country-rock limestones and shales terminating where enveloped by magma/sill. Such a feature is referred to as a 'broken bridge' in the sense that the country-rocks initially formed a bridge between the top and the bottom of the sheet(s) of magma that has been emplaced. Pole c. 1m long.

Site 5:



Figure North Skye 5.29: Minor discordance of sill with country-rock shales, with the sill locally forming bulbous projections into the country-rocks. Pole c. 1m long.

Site 6:



Figure North Skye 5.30: Two sill lobes (left and right of view) with an intervening bridge of inclined stratified country-rocks. Pole c. 1m long (resting on left-hand lobe).

Access the path and return to the public road.

End of excursion.