

# Moine geology of the Ross of Mull - an excursion

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By Tony Harris

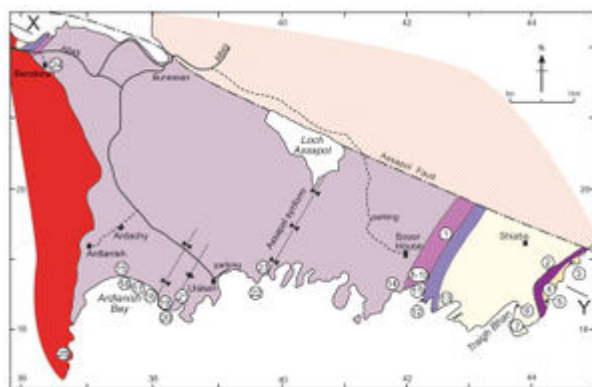


Fig. 1.1 Simplified geology map of the Ross of Mull, showing the localities described in the text.

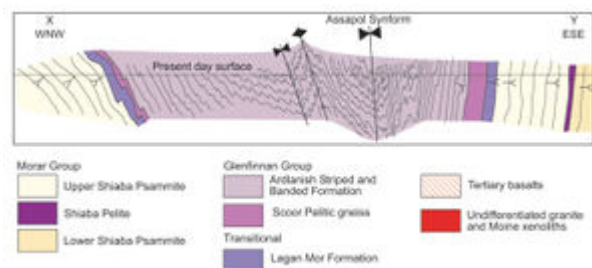


Fig. 1.2 NW-SE cross-section across the Moine rocks of the Ross of Mull (modified from Holdsworth et al., 1987).

- Purpose:** A general excursion across the Moine rocks of the Ross of Mull.
- Aspects covered:** Metasedimentary lithologies typical of the Morar and Glenfinnan groups, amphibolites, polyphase folds and fabrics, the margin of the (Caledonian) Ross of Mull Granite, regional and contact metamorphism, Tertiary minor intrusions.
- Useful addresses:** Hotel and B&B accommodation are available at Bunessan and Fionnphort, and also at Scoor House SW of Loch Assapol.
- Maps:** OS: Explorer 1:25,000 Sheet 373, Iona, Staffa and Ross of Mull; BGS: 1:50,000 sheet 43S Ross of Mull.
- Type of terrain:** Rocky coastline (some scrambling required), beaches and hillside.

### Short itineraries:

East limb of Assapol Synform from Scoor House: Localities 1.1, 1.3, 1.6 (+/-1.13), 1.10, 1.8, 1.9 and 1.14; distance is 5km, taking a whole day. West limb of Assapol Synform from Ardalanish: Localities 1.16, 1.17, 1.19, 1.20, 1.23; distance is 4km, taking 3-4 hours. Granite relationships from Bunessan and Ardalanish: Localities 1.15, 1.24 and 1.25; distance is 4km, taking 3-4 hours. Whole area (very abbreviated) starting from Scoor House: Localities 1.13, 1.10, 1.9, 1.14, 1.19 or 1.20, and 1.23; distance is 7km, taking a whole day.

### Excursion 1 Ross of Mull is composed of the following articles:

- Excursion 1 Ross of Mull - introduction
- [Itinerary A. Eastern limb of the Assapol Synform \(1\). Localities 1.1 to 1.7.](#)
- [Itinerary B. Eastern limb of the Assapol Synform \(2\). Localities 1.8 - 1.14.](#)
- [Itinerary C. Structure and lithologies within the Ardalanish Striped and Banded Formation, western limb of the Assapol Synform. Localities 1.15 - 1.20.](#)
- [Itinerary D. Western limb and core of the Assapol Synform. Localities 1-21 - 1.25.](#)

The Moine rocks of the Ross of Mull ([Fig. 1.1](#)), ([Fig. 1.2](#)) constitute the south-westernmost occurrence of the Supergroup. The inlier contains evidence that is critical in assessing the stratigraphic relationships between the Morar and Glenfinnan groups which are, respectively, thought to be laterally equivalent to the Shiaba and Assapol groups of Mull (Holdsworth *et al.*, 1987). The Moine outcrop is terminated to the west by the Ross of Mull Granite which was intruded towards the end of the Caledonian orogeny at  $421 \pm 5$  Ma (Oliver *et al.*, 2008). Lewisian basement and Iona Group cover rocks of the Caledonian foreland occur on the island of Iona directly west of the Ross of Mull. The mid-amphibolite facies metamorphic grade of the Moine rocks is anomalously high for rocks adjacent to the Moine Thrust and the Caledonide foreland (Holdsworth *et al.*, 1987). The former had been inferred to lie in the Sound of Iona, and Potts *et al.* (1996) concluded that it had been displaced by a major normal fault. This structure had brought Moine rocks of the Knoydart Nappe into contact with the rocks of the foreland before emplacement of the Ross of Mull Granite.

Almost all the localities lie on the southern coast of the Ross ([Fig. 1.1](#)). Access is most suited to cars and minibuses. Coaches should not be used without local advice. Itineraries A and B focus on Localities 1.1-1.13, and Itineraries C and D describe Localities 1.15-1.23 ([Fig. 1.1](#)). Itineraries A and B describe a traverse through the units of the Shiaba (= Morar) Group and the younger Assapol (= Glenfinnan) Group. Itineraries C and D traverse the Assapol Group on the western limb, and within the core, of the regional F3 Assapol Synform ([Fig. 1.2](#)) and includes various lithologies not seen in itineraries A and B. Two additional localities (24 and 25) focus on relationships between the Ross of Mull Granite and the Moine rocks in its envelope.

## References

At all times follow: [The Scottish Access Code](#) and [Code of conduct for geological field work](#)

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