

Allt Mhainisteir

Key to geology

- Coire Cheap Fm, undifferentiated
- Coire Cheap Fm — metacarbonate-rock
- Coire Cheap Fm — kyanite semipelite
- Coire Cheap Fm — semipelite
- Kinlochlaggan Quartzite Fm
- Kinlochlaggan Quartzite Fm — platy quartzite with psammite and thin semipelite layers
- Sron Garbh Magnetite Semipelite Fm
- Aonach Beag Semipelite Fm
- Inverlair Psammite Fm — gneissose psammite with thin quartzite layers, where differentiated
- Inverlair Psammite Fm
- Creag Meagaidh Psammite Fm
- Glen Banchor Psammite and Semipelite Fm — flaggy to platy psammite
- Glen Banchor Psammite and Semipelite Fm
- Quartzite in other units, where differentiated

13. The Aonach Beag Slide is not exposed in the Allt Liath nam Badan but a **continuous section through the contact of the Kinlochlaggan succession with the Grampian Group** is exposed nearby at NN 522 851 on the eastern slope of Meall Each. There, a medium-scale asymmetrical fold hinge preserves a low-strain area in the Creag Meagaidh Psammite Formation. The main tectonic fabric is at a high angle to bedding. Graded beds, typically up to 10–15 cm (and locally 30 cm) thick, range from massive psammite to micaceous psammite with thin semipelitic tops. The stratigraphy youngs to the east towards a slide that forms the contact with the Kinlochlaggan succession. Much of the Creag Meagaidh Psammite Formation to the west is flaggy and strongly attenuated with very tight or isoclinal folds. Gneissose semipelites and psammites of the Inverlair Psammite Formation form a unit a few tens of metres thick adjacent to the trace of the Aonach Beag Slide (NN 526 852). To the east of the slide, schistose to platy semipelite with some psammite and abundant amphibolite represent the Aonach Beag Semipelite Formation of the Kinlochlaggan succession.

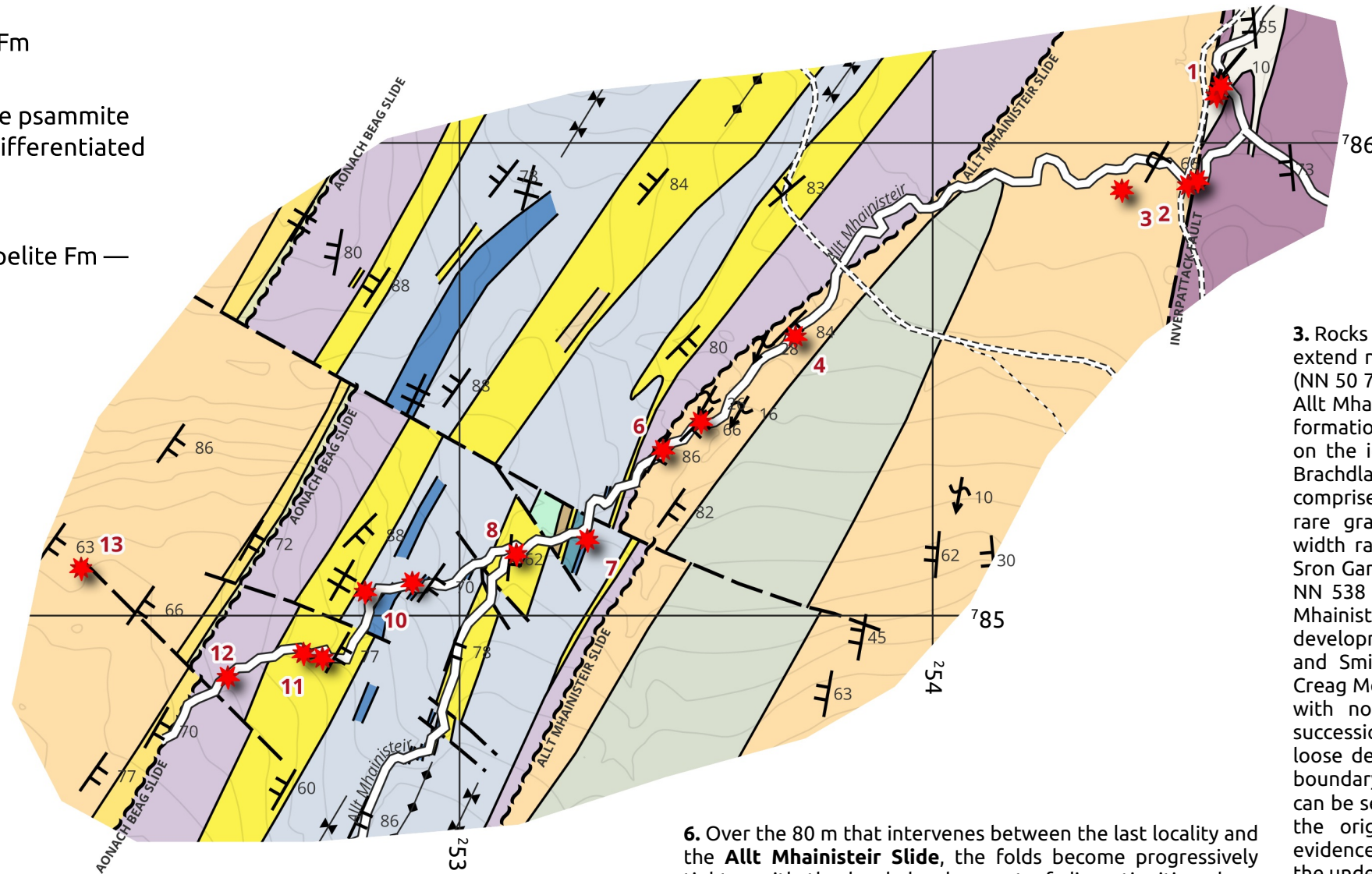
1. East of the **Inverpattack Fault** and into the River Pattack, small- to medium-scale asymmetrical and chevron folds occur together with fractures, many of which dip steeply to the west. Some fold limbs are truncated by the fractures, whereas in other examples semipelitic lithologies are crumpled and crenulated adjacent to discontinuities. The geometry of crumple folds suggests that displacement across the fractures has a normal sense (i.e. downthrow to the west). Microdiorite dykes cut some folds, whereas a dyke at NN 5461 8612 might be deformed by a fold; other dykes are deformed in fracture zones.

2. Grampian Group rocks assigned to the **Creag Meagaidh Psammite Formation** of the Corryairack Subgroup are well exposed in the lower part of the Allt Mhainisteir section, immediately west of the Inverpattack Fault-zone (NN 544 859). A succession of graded beds, typically 20 cm thick, are composed dominantly of psammite in which thin micaceous bed tops represent original muddier sediment. The rocks dip steeply to the south-east but young to the west towards the trace of the Kinlochlaggan Syncline; hence they are inverted.

3. Rocks of the Appin Group, **Sron Garbh Semipelite Formation** extend north- north-eastwards from the valley of the Allt Cam (NN 50 78) towards an unexposed section at NN 542 859 in the Allt Mhainisteir, to the west of the outcrop just described. The formation is very well exposed on Sron Garbh (NN 514 814) and on the ice-scoured slopes between Sron Garbh and Meall na Brachdlach (NN 518 824). Across these locations, the formation comprises almost entirely gneissose magnetite semipelite with rare gradations towards micaceous psammite. The outcrop width ranges from at least 750 m immediately north-east of Sron Garbh to less than 200 m 5.5 km to the north-east around NN 538 856. The formation is not exposed north of the Allt Mhainisteir and has been interpreted as a local facies development within the Kinlochlaggan succession (Robertson and Smith, 1999). The formation is juxtaposed against the Creag Meagaidh Formation in the north and east of its outcrop, with no intervening older elements of the Kinlochlaggan succession (Fig. 27). Although contacts are not clearly exposed, loose debris in the form of regolith can be traced across the boundary near Meall na Brachdlach. No highly strained material can be seen; the contacts are therefore regarded as preserving the original depositional relationships and hence provide evidence of onlap of the Sron Garbh Semipelite Formation onto the underlying Grampian Group (Robertson and Smith, 1999).

4. Returning to the river section, the next exposures to the north- west (at NN 5371 8559) comprise further graded psammites that are also assigned to the Creag Meagaidh Formation, albeit a rather **coarser grained** lithology than that seen to the east.

5. At NN 5351 8541, **abundant close folds** deforming the lithological banding are particularly well seen. The folds die out over short distances along their axial surfaces but a coarse schistosity, axial planar to the folds and strongly oblique to the bedding, is prominent even where there are no folds. Remnants of graded bedding are locally recognizable, although the increase in grain size due to metamorphism has modified most primary features.



9. The **Coire Cheap Formation** is dominated by semipelite but is distinguished by the presence of calcisilicate rocks and metacarbonate rocks (e.g. at NN 5290 8507). The latter range up to 45 m in outcrop width.

10. The Kinlochlaggan Quartzite Formation is **overlain abruptly by the Coire Cheap Formation** in the Allt Liath nam Badan at NN 5280 8505; pale-coloured metacarbonate rock occurs close to the base of the Coire Cheap Formation at this contact. Here, the Sron Garbh Semipelite Formation is absent, most likely as the result of original depositional variations rather than the effect of any tectonic excision.

11. The Kinlochlaggan Quartzite Formation is very well exposed in the Allt Liath nam Badan around NN 5267 8492. At NN 5271 8491, the quartzite is cut by an **amphibolite lens**, at least 35 m thick and probably less than 100 m long. This amphibolite has a sharp contact with the quartzite.

12. At NN 5251 8487, more than 18 m of massive and locally gneissose psammite of the **Aonach Beag Semipelite Formation**, with streaked-out feldspar megacrysts, occurs between flaggy schistose semipelite and fissile, intensely deformed psammite and micaceous psammite.

7. At NN 5327 8518, **metacarbonate rock** contains pods of cross-cutting pegmatite and is separated by 1 m of micaceous psammite from gneissose semipelite with leucosomes up to 1 cm across and 2 cm-long kyanites.

8. The **Kinlochlaggan Quartzite Formation** is very well exposed close to the confluence between the Allt Mhainisteir and the Allt Liath nam Badan around NN 5312 8513, where pebbly layers and relics of cross-bedding can be seen. It comprises massive white quartzite up to 160 m thick (see also the *Kinloch Laggan Road GCR* site report). No representative of the Kinlochlaggan Boulder Bed has been recognized in this section.

6. Over the 80 m that intervenes between the last locality and the **Allt Mhainisteir Slide**, the folds become progressively tighter with the local development of discontinuities along fold limbs. Some of these discontinuities host metamorphic quartzofeldspathic segregations. Within 30 m of the slide (at NN 5343 8535) isoclinal folds, some of which are rootless, are exposed in the bed of the Allt Mhainisteir (Fig. 29). Quartzofeldspathic leucosomes and thin pegmatitic veins up to 1 cm thick are also present within the pervasive gneissose foliation. At NN 5339 8532, the slide contact is marked by an abrupt change from flaggy psammite and micaceous psammite of the Creag Meagaidh Psammite Formation to the Aonach Beag Semipelite Formation of the Kinlochlaggan succession, which here comprises micaceous psammite and psammite with 10 cm-thick, brown-weathering schistose semipelites and concordant homogeneous to banded amphibolites.