Tables

Table 1.1 GCR site selection criteria — Lewisian, Moine and Torridonian

Site name	GCR selection criteria
Lewisian Block	
Lewisian of the Outer Hebrides Network Chapter 2	
Roineabhal, South Harris	Representative of the Palaeoproterozoic South Harris Igneous Complex. Exceptional example of a metamorphosed layered gabbro-anorthosite intrusion, the largest in the British Isles. Internationally important for the understanding of Palaeoproterozoic magmatism and tectonics.
Na Buirgh (Borve), South Harris	Representative of Palaeoproterozoic elements of the Lewisian Gneiss Complex of the Outer Hebrides, including the South Harris Igneous Complex, the metasedimentary and metavolcanic rocks of the Langavat Belt and the Uig Hills–Harris Granite Vein-Complex.
North Pabbay, Sound of Harris	Representative of the variation in intensity of Laxfordian deformation and metamorphism across a lithological boundary in the Lewisian Gneiss Complex.
North Uist Coast	Representative of Laxfordian structures in the Lewisian Gneiss Complex. Exceptional examples of fold and boudinage structures on a variety of scales, mainly affecting intrusions of the 'Younger Basic' Suite.
Gearraidh Siar (Garry-a-siar) and Baile a' Mhanaich (Balivanich), Benbecula	Representative of the variation in intensity of Laxfordian deformation and metamorphism across areas of contrasting lithology. Also representative of the structural relationships of the 'Younger Basic' Suite. Internationally important for the understanding of the scale and processes of Laxfordian reworking in the Lewisian Gneiss Complex.
Rhughasinish, South Uist	Representative of the Palaeoproterozoic 'Younger Basic' Suite. Exceptional example of a composite mafic–ultramafic intrusion.
Loch Sgioport (Skipport), South Uist	Representative of Scourian meta-igneous and metasedimentary gneisses, and members of the 'Older Basic' and 'Younger Basic' suites, which have been relatively unaffected by Laxfordian reworking.
Cnoca Breac (Rubh' Aird-mhicheil), South Uist	Representative of the mafic and ultramafic intrusive rocks of the 'Older Basic' Suite. Exceptional example of an Archaean layered mafic–ultramafic body.
Leinis (Leanish), Barra	Representative of early Scourian gneisses, a variety of late-Scourian intrusions, and dykes of the 'Younger Basic' Suite, which are exceptional in that they have not suffered significant Laxfordian reworking.
Cnoc an Fhithich (Aird Grèin)	Representative of features related to the Outer Hebrides Fault Zone. Exceptional examples of pseudotachylite veins and breccias.
Lewisian of the Scottish mainland Network — Chapter 3	

	Representative of the Scourian features of the mainland Lewisian Gneiss Complex, including exceptional examples of gabbroic and tonalitic granulite-facies gneisses.
Badcall	Representative of the Scourie Dyke Suite. Internationally important as the type locality for the Badcallian event, and also as one of the first localities in the world to be studied in detail using isotopic dating techniques.
Scourie Mor	Representative of the Scourian features of the mainland Lewisian Gneiss Complex, including exceptional examples of mafic and ultramafic bodies that have undergone granulite-facies metamorphism.
Sìthean Mòr	Representative of metasedimentary gneisses of the mainland Lewisian Gneiss Complex that have been metamorphosed to granulite facies.
Scourie Bay	Representative of the Scourie Dyke Suite.
Tarbet to Rubha Ruadh	Representative of the Laxford Front, illustrating the transition from Scourian gneisses of the Central Region to those affected by Inverian and Laxfordian reworking to the north. Internationally important as one of the first locations at which an episode of mafic dyke emplacement was used to separate tectonic events, creating a type of 'pseudo-stratigraphy'.
Site name	GCR selection criteria
Loch Drumbeg	Representative of the mafic–ultramafic bodies that are believed to be the oldest parts of the Lewisian Gneiss Complex.
An Fharaid Mhòr to Clachtoll	Representative of the Inverian event in the mainland Lewisian Gneiss Complex, including the Canisp Shear Zone, an exceptional example of an Inverian shear-zone reworked during the Laxfordian event. Internationally important as the type locality for the Inverian event.
Grutinard River	Representative of the transition from Scourian gneisses of the Central Region to those affected by Inverian reworking to the south.
Creag Mhòr Thollaidh	Representative of the Laxfordian Gairloch Shear Zone and of the large scale Tollie Antiform. Exceptional example of a Laxfordian shear-zone, recognizable by the increasing intensity of deformation of Scourie dykes across the area.
Kerrysdale	Representative of the Kerrysdale unit of the Loch Maree Group, and of shear zones within the Loch Maree Group.
Flowerdale	Representative of the Flowerdale marble belt of the Loch Maree Group.
An Ard	Representative of the Ard Gneisses, the only known Palaeoproterozoic granites to intrude the Loch Maree Group.
Loch Braigh Horrisdale to Sidhean Mòr	Representative of the Laxfordian Gairloch Shear Zone, and an exceptional locality for the demonstration of the sequence of Palaeoproterozoic metamorphic events in the Southern Region of the Lewisian Gneiss Complex.
Alligin (Diabaig)	Representative of the transition from Scourian gneisses of the Central Region to those affected by Inverian and Laxfordian reworking to the south. Exceptional examples of Laxfordian ductile shear-zones.

Torridonian Block — Chapter 4	
Stoer	Representative of the internationally important Stoer Group, the only unmetamorphosed Mesoproterozoic stratigraphical group in Britain, and an exceptional example of a sedimentary and volcanic sequence formed in a rift environment.
Loch na Dal	Representative of the lower part of the Sleat Group.
Kylerhea Glen	Representative of the middle to upper part of the Sleat Group.
Loch Eishort	Representative of the upper part of the Sleat Group.
Diabaig	Representative of the Diabaig Formation of the Torridon Group and of the Torridonian/Lewisian unconformity. Exceptional locality for demonstrating the progressive burial of an exhumed Precambrian topography by river sands and lake silts accumulating in a Neoproterozoic rift-valley. Exceptional examples of microfossils in the lake silts that deserve further research.
Upper Loch Torridon	Representative of the Diabaig Formation of the Torridon Group and of the Torridonian/Lewisian unconformity. Exceptional locality for demonstrating the progressive burial of an exhumed Precambrian topography by river sands and lake silts accumulating in a Neoproterozoic rift-valley. Representative of the unconformities between the Stoer and Torridon groups, and between the Lewisian gneisses and the Stoer Group.
Rubha Dunan Enard Bay	Exceptional as the only locality at which the unconformable relationship between the Mesoproterozoic Stoer Group and the Neoproterozoic Torridon Group can be proved unequivocally. Also representative of the unconformity between the Lewisian gneisses and the Stoer Group.
Achduart	Representative of the basal members of the Applecross Formation of the Torridon Group.
Aultbea	Representative of the Aultbea Formation of the Torridon Group.
Cailleach Head	Representative of the Cailleach Head Formation of the Torridon Group. Exceptional example of a Precambrian cyclothemic sequence.
Moine Block	
The Moine Thrust Belt Network — Chapter 5	
Eriboll	Representative of the northern part of the Moine Thrust Belt. Exceptional examples of thrust structures, associated folds, and mylonites. Internationally important for historical reasons, as a key locality for the understanding of concepts of compressional tectonics.
Cleit an t-Seabhaig	Representative of mylonitic rocks from the uppermost part of the Moine Thrust Belt and the lowermost part of the Moine Thrust Sheet. Internationally important as the location at which the structure considered to be the Moine Thrust was first directly observed.

Faraid Head	Representative of mylonitic rocks from the uppermost part of the Moine Thrust Belt and the lowermost part of the Moine Thrust Sheet. Exceptional example of a klippe of the Moine Thrust Sheet. Internationally important as one of the first localities where the kilometre-scale displacement of a major thrust sheet was recognized.
Sango Bay	Exceptional examples of post-Caledonian normal faults that have downthrown Moine Thrust Belt mylonites of the Faraid Head klippe.
Foinaven	Exceptional examples of thrust structures, including classic examples of a duplex, within Cambrian quartzites of the Moine Thrust Belt.
Glencoul	Representative of the northern part of the Assynt Culmination in the Moine Thrust Belt. Exceptional examples of thrust exposures. Internationally important as a world-famous view of large-scale thrust sheets.
Skiag Bridge	Representative of the foreland succession, Sole Thrust, and lowest imbricate systems in the Assynt Culmination. Exceptional examples of stratigraphical repetition due to thrusting. Internationally important as a teaching site for basic thrust concepts.
Stronchrubie Cliff	Representative of imbricate thrusts within the Sole Thrust Sheet in the Assynt Culmination. Exceptional examples of sections that can be used to study the three-dimensional geometry of an imbricate system.
Traligill Burn	Representative of thrusting within the Sole Thrust Sheet in the Assynt Culmination. Exceptional exposures of a thrust plane.
Ben More Assynt–Conival–Na Tuadhan	Representative of the central part of the Assynt Culmination, including the Ben More Thrust. Exceptional large-scale exposures of thrusts and related folds. Internationally important as a classic location for the demonstration of thrust structures.
Sgonnan Mòr–Dubh Loch Beag–Upper Glen Oykel	Representative of the Ben More Thrust and associated fold and thrust structures in the Assynt Culmination. Also representative of the relationships between Lewisian and Torridonian units in the Ben More Thrust Sheet.
Cam Loch	Representative of thrust klippen and thrust-propagation folding in the Assynt Culmination.
Knockan Crag	Representative of the Moine Thrust and of the Moine mylonites. Exceptional example of a well-exposed, accessible thrust plane. Internationally important as one of the first locations at which the Moine Thrust was observed and as a world-famous locality for the study of thrust structures.
Dundonnell	Representative locality at which a 'piggy-back' thrust sequence was first demonstrated in the Moine Thrust Belt. Exceptional and internationally important as the type example of an antiformal-stack duplex.
Càrn na Canaich	Representative of those parts of the Moine Thrust Belt that show little or no deformation in the footwall to the Moine Thrust.

Slioch–Heights of Kinlochewe	Representative of the Moine Thrust Belt and the foreland succession in the Kinlochewe area. Of historical importance as one of the key localities of the 'Highlands Controversy'.
Meall a' Ghiubhais	Exceptional views of major thrust sheets and klippen in the Moine Thrust Belt, including the Kishorn Thrust Sheet.
Beinn Liath Mhor	Representative of the Moine Thrust Belt in the Achnashellach area. Exceptional examples of large-scale imbricate systems that can be clearly seen from distant viewpoints.
Cnoc nam Broc, Kishorn	Representative of a major fold–thrust complex termed the 'Kishorn Thrust Sheet', one of the major structures of the southern Moine Thrust Belt.
Slumbay Island, Loch Carron	Exceptional examples of mylonites in the Moine Thrust Belt.
Carn a' Bhealaich Mhoir	Representative of the Lewisianaorridonian unconformity within the Moine Thrust Belt.
Hangman's Bridge	Representative of the Moine Thrust, being one of the few localities where the thrust plane is actually exposed.
Ard Hill	Representative of the Balmacara Thrust and associated structures of the Moine Thrust Belt in the Lochalsh area.
Ord	Representative of the Ord Window, one of the major structures in the Moine Thrust Belt whose origin is not yet fully understood.
Tarskavaig	Representative of the Tarskavaig thrust sheets, and the metasedimentary rocks of the enigmatic Tarskavaig Group.
Ard Thurinish–Port na Long	Representative of the Moine Thrust, being its southernmost exposure.
Moine (North) Network — Chapter 6	
	Representative of the lower parts of the Moine Supergroup.
Ben Hutig	Exceptional examples of deformed pebbles and quartz veins that have been used to study deformation mechanisms.
Port Vasgo–Strathan Bay	Representative of the basal Moine metasedimentary rocks, including conglomerate units, the underlying Lewisianoid basement, and the Talmine Imbricate Zone. Exceptional examples of outcrop-scale sedimentary and tectonic structures that have been used to interpret the regional structural history.
Melness	Representative of the basal Moine metasedimentary rocks and the underlying Lewisianoid basement, and of the Talmine Imbricate Zone.
Allt na Caillich	Representative of the Ben Hope Thrust and Ben Hope Sill. Exceptional example of an intra-Moine thrust.
Allt an Dherue	Representative of the basal Moine metasedimentary rocks and the underlying Lewisianoid basement. Representative of the Loch a' Mhoid Metadolerite Suite.
Coldbackie Bay	Representative of the unconformity between the Moine psammites and the overlying sandstones and conglomerates, which are probably Devonian in age.
Strathan Skerray to Skerray Bay	Representative of the Borgie Lewisianoid Inlier.
Aird Torrisdale	Representative of the Naver Thrust Zone. Exceptional exposures of ductile thrust contacts between Moine rocks and Lewisianoid gneisses and within the Moine sequence.

Ard Mor (Bettyhill)	Representative of the migmatitic Moine rocks of the Bettyhill Banded Formation, and of the amphibolite intrusions of the Bettyhill Suite.
Farr Bay (Bettyhill)	Representative of the Farr Lewisianoid inlier and associated Moine rocks of the Bettyhill Banded Formation. Exceptional examples of refolded folds.
Glaisgeo to Farr Point	Representative of the appinitic, dioritic and amphibolitic Clerkhill Intrusion, and the Moine rocks of the Bettyhill Banded Formation.
Sgeir Ruadh (Portskerra)	Representative of the migmatitic Moine rocks known as the Portskerra gneisses, and their relationships with mafic intrusions of the Bettyhill Suite and with the Strath Halladale Granite Complex. Also shows the unconformity between the Moine rocks and the overlying Middle Devonian sandstones.
Dirlot Castle	Representative of the unconformity between the Moine rocks and the overlying Devonian carbonate-cemented breccias and sandstones.
Ben Klibreck	Representative of the Naver Thrust. Exceptional examples of migmatites, first studied in the 1920s and still the subject of research.
Oykel Bridge	Exceptional examples of mullions in the Moine rocks. Historically important in the development of ideas relating small-scale structures to regional tectonics.
The Airde of Shin	Representative of the lithologically diverse Shin Lewisianoid Inlier, which includes amphibolitic and quartzofeldspathic gneisses, metalimestones and schistose calc-silicate rocks.
Allt Doir' a' Chatha	Representative of finely banded amphibolitic rocks of the Shin Lewisianoid Inlier, originally interpreted as metavolcanic units within the Moine.
Creag na Croiche	Representative of the outer contact and the migmatitic envelope of the Rogart Pluton.
Aberscross Burn-Kinnauld	Representative of the transition from unmigmatized Moine rocks into the migmatitic envelope of the Rogart Pluton.
Brora Gorge	Representative of the outer contact and the migmatitic envelope of the Rogart Pluton.
Carn Gorm	Representative of the Carn Gorm 'Knoydartian' pegmatite, which has been dated by Rb-Sr methods and provides evidence for a Precambrian metamorphic event affecting the Moine rocks.
Comrie	Representative of Neoproterozoic-age mafic meta-igneous rocks in the Moine succession.
Cromarty and Rosemarkie Inners	Representative of the Moine and Lewisianoid rocks of the Cromarty and Rosemarkie inliers within the Devonian basins of the Moray Firth.
Moine (Central) Network — Chapter 7	
Fannich	Representative of the Morar and Glenfinnan groups, together with associated Lewisianoid inliers. Also representative of the ductile Sgurr Beag Thrust, which separates the two groups.

Mean an t-Sithe and Creag Rainich	Representative of the Sgurr Beag Thrust, demonstrating the chronological relationships between the period of ductile thrusting within the Moine Supergroup and the later movement focused on the Moine Thrust Belt.
Loch Monar	Representative of the Glenfinnan Group. Exceptional examples of fold interference patterns. Internationally important for the study of the geometry and formation mechanisms of complex fold structures in metasedimentary rocks.
Abhainn Gleann nam Fiadh	Representative of the Glenfinnan Group. Exceptional examples of well-preserved sedimentary structures, including cross-bedding and slump structures.
Attadale	Representative of the unconformity between the Moine rocks and the underlying Lewisianoid basement. Exceptional example of the basal conglomerate of the Moine succession.
Dornie-Inverinate Road Section	Representative cross-section across the Glenelg–Attadale Lewisianoid Inlier, including quartzofeldspathic gneisses, ultramafic bodies, metasedimentary rocks and eclogites, and also the zone of deformation separating the eastern and western parts of the inlier.
Avernish	Representative of the Glenelg–Attadale Lewisianoid Inlier, showing the original unconformable relationship between the inlier and the overlying Moine rocks.
Totaig	Representative of the variety of rocks in the eastern part of the Glenelg–Attadale Lewisianoid hiller, including metalimestones, kyanite-bearing gneisses, eulysite, graphitic schists, and exceptional examples of eclogites.
Allt Cracaig Coast	Representative of the Glenelg–Attadale Lewisianoid Inlier, showing the original unconformable relationship between the inlier and the Moine rocks. Exceptional example of the tectonized basal conglomerate of the Moine succession.
Druim Iosal	Representative of the variety of rocks in the eastern part of the Glenelg–Attadale Lewisianoid Inlier, including metalimestones, calc-silicate rocks, graphitic schists and exceptional examples of kyanite-bearing pelitic gneisses.
Beinn a' Chapuill	Representative of the Glenelg–Attadale Lewisianoid Inlier, showing the relationships between the inlier and the overlying Moine rocks. Exceptional example of a kilometre-scale refolded fold.
Eilean Chlaraail-Camas nan Ceann	Representative of the western part of the Glenelg–Attadale Lewisianoid Inlier.
Rubha Camas na Cailinn	Representative of the Glenelg–Attadale Lewisianoid Inlier, and showing Moine rocks interleaved and folded together with rocks of the inlier.
Ard Ghunel	Exceptional examples of zoned ultramafic pods within the Lewisianoid gneisses of the Moine Nappe.

Moine (South) Network — Chapter 8

Glen Doe	Representative of metagabbroic intrusive rocks associated with the West Highland Granite Gneiss Suite.
Kinloch Hourn	Representative of the Sgurr Beag Thrust, an exceptional example of a major ductile thrust within the Moine succession.

Quoich Spillway	Representative of the West Highland Granite Gneiss Suite.
Knoydart Mica Mine	Representative of the 'Knoydartian' pegmatite suite, dating of which provides evidence for a Precambrian metamorphic event affecting the Moine rocks. Exceptional examples of large mica and beryl crystals.
North Morar	Representative of the Morar Group of the Moine and of associated Lewisianoid inliers. Also representative of the change from low-grade, moderately deformed Moine rocks in the west, to higher-grade, complex thrust and folded Moine rocks in the east.
Drulmindarroch	Representative of the Lower Morar Psammite Formation.
Fassfern to Lochailort Road Cuttings	Representative section across the whole Moine Supergroup in Inverness-shire.
Lochailort	Representative of the southern outcrop of the Sgurr Beag Thrust.
Eas Chia-Aig Waterfalls	Representative of an inlier of migmatitic gneisses correlated with the Glenfinnan Group, lying within the Loch Ed Group of the Moine.
Loch Moidart Road Cuttings	Representative of the Upper Morar Psammite Formation, showing good examples of sedimentary structures such as cross-bedding and slumps.
Eilean Mòr and Camas Choire Mhuilinn	Representative of the Upper Morar Psammite Formation. Exceptional examples of sedimentary structures such as cross-bedding and de-watering structures.
Ardalanish Bay, Mull	Representative of the most westerly known outcrop of the Moine succession and its contact with the late Caledonian Ross of Mull Pluton. Exceptional examples of aluminosilicate minerals within the metamorphic aureole.
Lewisian and Moine of Shetland Network — Chapter 9	
Uyea to North Roe Coast	Representative of the Caledonian Front in Shetland, including rocks correlated with the Lewisian gneisses, and the Moine and Dalradian supergroups. Internationally important for correlation along the length of the Caledonide Belt.
Gutcher	Representative of psammites and microcline augen gneisses of the Yell Sound Division, which is considered to correlate with the Moine Supergroup.
North Sandwick	Representative of psammites, pelites and quartzites of the Yell Sound Division, which is considered to correlate with the Moine Supergroup, and also of metamorphosed mafic sheets intruding the metasedimentary rocks.
Hascosay	Representative of the mylonitic gneisses of the Hascosay Slide Zone.
Calliyoe	Representative of the mylonitic gneisses of the Hascosay Slide Zone. Exceptional examples of fold structures within the mylonitic rocks.
Voxter Voe and Valayre Quarry	Representative of the Valayre Gneiss, a microcline-megacryst augen gneiss that forms the western edge of the Boundary Zone between the Moine and Dalradian rocks of Shetland.

(Table 2.2) Rock types and kinematic history of the Outer Hebrides Fault Zone (OHFZ).

Based on information from Fettes *et al.* (1992), MacInnes *et al*. (2000) and Imber *et al.* (2001).

Lewis and Harris		North and South Uist, Barra	
Rock type	*Structure and tectonic event*	*Rock type*	*Structure and tectonic event*
Fault gouge, breccia, some cataclasite.	Steep faulting of Devonian, Carboniferous and Mesozoic age related to uplift and basin formation. Formation of Minch Fault.	Fault gouge, breccia, some cataclasite.	Steep faulting related to uplift and basin formation in the Devonian and Carboniferous. Dextral strike-slip on WNW-trending faults of Mesozoic age.
Phyllonite and mylonite. Folding of pre-existing mylonites. Crenulation cleavage. Lower greenschist-facies mineralogies.	Extension with top-to-the- E movements down-dip of mylonite belts. Probably of late Silurian or Early Devonian age. Related hydrous retrogression in OHFZ and footwall gneisses.	Phyllonite, mylonite, planar gouges.	Extension with top-to-the-ENE/E movements focused along mylonite belt margins. Probably of late Silurian or Early Devonian age.
Phyllonite and mylonite. Greenschist-facies mineralogies (biotite).	Thrust zones with movement towards the WNW. Attributed to sinistral strike-slip movements by some authors. Late Silurian (Scandian) age.	Phyllonite and mylonite. Greenschist-facies mineralogies (biotite).	Thrust zones with movement towards the WNW and possibly south-west. Attributed to sinistral strike-slip movements (top-to-the-NE) by some authors. Late Silurian (Scandian) age.
Pseudotachylite breccia and 'Mashed Gneiss'. Cataclasite and ultracataclasite zones. Gneisses with marked cataclastic and protomylonitic fabric.	Main thrust zones and lensoid zones of fault rock. Formed in relatively dry gneisses but now commonly retrogressed. Reflect major top-to-the-WNW thrust movements with multiple seismic movements. Mainly of late Silurian age (Scandian Event).	Pseudotachylite breccia and 'Mashed Gneiss'. Gneiss with marked cataclastic and protomylonitic fabric.	Well-defined western bounding thrust to OHFZ showing top-to-the-WNW movement. Some defined thrusts and areas of pseudotachylite development west of OHFZ. Local movement sense more variable. Probably of Late Silurian age (Scandian Event), but parts may be considerably older.
None identified.	Meso/Neoproterozoic Torridon Group sedi- mentary rocks preserved at depth in Minch Basin. Sequence thickest in hangingwall of OHFZ implying extensional movement along the fault zone at *c.* 1000 Ma.	None identified.	Meso/Neoproterozoic Torridon Group sedimentary rocks preserved at depth in Minch Basin. Sequence thickest in the hangingwall of OHFZ implying extensional movement along the fault zone at *c.* 1000 Ma.
Mylonitic gneisses.	Dextral oblique shear zone postulated in the Langavat Belt offsetting earlier elements of the OHFZ. Biotite cooling ages imply movement at *c.* 1100 Ma (Grenvillian).	No equivalent fault rocks identified.	

Mylonite, ultramylonite pseudotachylite and cataclasite. Lower amphibolite-grade mineralogies.	Mainly small-scale shallow E-dipping thrust zones with top-to-the-WNW sense of movement. Focused in part on Laxfordian granite sheets. Age of between 1550 Ma and 1100 Ma postulated.	No equivalent fault rocks identified.

(Table 3.1) Summary of isotopic ages from the Lewisian Gneiss Complex of the Northern and Central regions of mainland Scotland.

Event	Northern region	Central region	Reference
Laxfordian metamorphism	1750–1670 Ma	1750–1670 Ma	Corfu et al. (1994); Kinny and Friend (1997); Zhu et aL (1997a,b)
granite sheets	1855 Ma		Friend and Kinny (2001) Heaman and Tarney (1989);
Scourie dyke emplacement	no age data	2020–1920 Ma	Waters et al. (1990)
		2420–2400 Ma	Heaman and Tarney (1989); Corfu et aL (1994)
Inverian metamorphism and deformation	no evidence found for Inverian event	**Scourie** 2490–2480 Ma **2530 Ma** **Gruinard Bay** no evidence found of Inverian event	Corfu et al. (1994); Friend and Kinny (1995); Kinny and Friend (1997); Zhu et al. (1997a,b) Corfu et al. (1998); Kinny and Friend (1997)
Badcallian deformation and granulite-faciesmetamorphism		**Scourie** 2760–2710 Ma	Corfu et al. (1994); Zhu et aL (1997a,b)
igneous protolith (TTG)	2680 Ma(diorite) 2840–2800 Ma	**Scourie** 3030–2960 Ma **Gruinard Bay** 2736–2726 Ma 'trondhjemite' 2825–2790 Ma (mafic rocks) 2850–2750 Ma	Friend and Kinny (2001); Friend and Kinny (1995) Corfu et al. (1998) Kinny and Friend (1997) Whitehouse et al. (1997) Love et al (2004)

(Table 6.1) Sequence of tectonometamorphic events recognized in the Naver Nappe.

1. Deposition of arenaceous and argillaceous Moine sediments unconformably upon Lewisianoid gneiss basement.
2. Emplacement of early tholeiitic igneous intrusives (now represented by the Bettyhill Suite amphibolites). These include the Ard Mor Amphibolite.
3. D1: Upper amphibolite-facies metamorphism producing gneissose layering (S1) and extensive lit-par-lit regional migmatization. Early mafic intrusives deformed and metamorphosed to foliated garnet amphibolites.
4. D2: Development of tight NW- and SE-plunging (F2) folds and associated strong mineral extension lineation L2. Some folds show extreme curvilinearity, associated with distinct zones of high strain. Retrogression of D1 mineral assemblages in some 'early' amphibolites and imposition of D2 fabric. Movement along Naver Thrust Zone. Partial melting of gneisses at the end of this event to produce foliated (G2) granite sheets (early phases of the Torrisdale Vein-Complex). U-Pb zircon dating suggests an Early Ordovician age (Kinny et al., 1999).
5. D3: Upright, tight SE-plunging (F3) folds with steep E-dipping axial surfaces, largely coaxial with F2 folds. Associated extension, intersection and pronounced rodding lineation (L3). Coaxial F2–F3 refolds.
Further retrogression and foliation of 'early' amphibolites.
6. Syn-D3 emplacement of the Clerkhill Intrusion followed by generation of foliation and folding of foliated appinitic amphibolite sheets. U-Pb zircon dating suggests Mid-Silurian age.
7. Emplacement of post-F3 microdiorites and unfoliated (G3) pegmatites and granites of the Torrisdale Vein-Complex.
8. D4: Localized brittle folding, faulting and development of en echelon tension gashes.
9. Emplacement of cross-cutting (G4) microgranites as well as porphyritic microgranite and lamprophyric sheets.

(Table 7.1) Caledonian and later minor intrusions — Moine (Central) and Moine (South) areas

Name of swarm/ sub-suite/suite	Age	Area of occurrence	Abundance	Rock types
Quartzose Amphibolite	Upper Ordovician	Near Fort Augustus.	Local	Quartzose amphibolite, tonalite
Glen Moriston Vein-Complex	Upper Ordovician	In Glen Moriston, extending north to Strathglass.	Abundant	Muscovite-biotite granite, aplitic and pegmatitic granite
Loch Eil Granite Vein-Complex	Late Silurian	West end of Loch Eil, Glen Fionnlighe.	Abundant	Granite, including aplitic and pegmatitic granite
Loch Arkaig Granite Vein- Complex	Late Silurian	Centred on Meall Blair north of Loch Arkaig.	Abundant	Granite, including aplitic and pegmatitic granite
Mallie Granite Vein-Complex	Late Silurian	In Glen Mallie, south of Loch Arkaig.	Abundant	Granite, including aplitic and pegmatitic granite. Includes small granodiorite body
porphyritic microgranodiorite ('Felsic Porphyrites')	Late Silurian	Cluanie area, upper Glen Moriston.	Moderately abundant	Porphyritic microgranodiorite
Microdiorite Sub-suite	Late Silurian	Widespread across Moine outcrop south of Glen Moriston to the Sound of Mull. Also present in Ross-shire.	Very abundant, reaching maximum concentration in central zone between Cluanie and Salen	Range from microgranodiorite to melamicrodiorite

Appinite Suite	Late Silurian	Widespread across the Moine outcrop but concentrated in Strontian-Sunart-Moidart area and in Glen Garry. Associated with the Strontian Pluton. Sparse to north of Glen Affric and Glen Shiel.	Abundant within clusters	Mainly coarse-grained hornblende-diorite but range from monzonite to pyroxene- and olivine-bearing hornblende-rich ultramafic rocks
porphyritic microgranodiorite ('Main Felsic Porphyrites')	Late Silurian	From Glen Affric south-west via Cluanie, Loch Arkaig and Loch Shiel down to Loch Mine on the Sound of Mull.	Abundant	Porphyritic microgranodiorite ranging to quartz microdiorites
Banavie Vein-Complex	Late Silurian	Adjacent to the Great Glen south of Loch Lochy. Extends up to 5 km north-west of Great Glen Fault.	Abundant	Granite and subsidiary aplitic granite and quartz feldspar pegmatite veins
Glen Garry Vein-Complex	Late Silurian	From Cluanie south-east to Loch Lochy, centred on Glen Garry.	Abundant	Mostly medium- to coarse-grained granodiorite, but ranging from quartz diorite to monzogranite
microgranite swarm ('felsites)	Early Devonian	Widespread but only abundant in swarm east of Ratagain Pluton.	Not abundant except in Ratagain swarm	Microgranite and microgranodiorite, locally porphyritic
Lamprophyre Sub-suite	Early Devonian	Widespread but concentrated in Ratagain swarm stretching from Loch Hourn north-east through Kintail to Glen Affric and Glen Cannich. Dykes extend west of Moine Thrust on Skye and in Applecross area.	Not abundant except in Ratagain swarm	Pyroxene minette, but some vogesite and rare kersantite
camptonite-monchiquite suite	Permo- Carboniferous	Widespread but concentrated in swarms — Monar, Killilan, Morar, Eil-Arkaig, Ardgour and Iona- Ross of Mull.	Locally abundant	Camptonite and camptonitic basalt mainly, rare monchiquite
Palaeogene dykes, mainly of the Skye, Mull, and Ardnamurchan swarms	Palaeocene to Early Eocene	Widespead on Sleat and west coast south of Loch Nevis.	Locally abundant	Dolerite, basalt

(Table 7.1) Continued Caledonian and later minor intrusions — Moine (Central) and Moine (South) areas.

Nature and trend of intrusion	Thickness of intrusion	Deformation	Reference
Elliptical masses, elongated north-east, rarely dykes. Found within Fort Augustus Granite Gneiss.	Bodies up to 1 km long but also as smaller pods. Rare dykes *c.* 3 m thick.	Low.	May and Highton, 1997
Lenticular sheets, veins, mainly concordant. Thicker sheets trend north-east.	From a few cm up to 40 m thick, but typically < 2 m thick.	Foliated, folded, boudined.	May and Highton, 1997
Ramifying network, no preferred orientation.	Seldom > 2 m thick, rarely larger bodies.	Only minor deformation.	Fettes and Macdonald, 1978
Ramifying network, no preferred orientation.	Seldom > 2 m thick, rarely larger bodies.	Only minor deformation.	Fettes and Macdonald, 1978
Ramifying network, no preferred orientation.	Seldom > 2 m thick, rarely larger bodies.	Only minor deformation.	Fettes and Macdonald, 1978
Dykes and sheets, trending approximately east. Some irregular bodies.	Typically *c.* 2 m thick but up to 5 m recorded.	Weakly schistose and recrystallized.	Peacock *et al.,* 1992; May and Highton, 1997
Sheets and dykes with chilled margins. Mineral assemblages altered and in part recrystallized under greenschist- or epidote-amphibolite-facies conditions. Some irregular sheets in west coastal area exhibit largely unmodified igneous textures and mineralogies. Most sheets dip moderately south-east, but swarms of NNE- and E-W-trending sheets can be distinguished locally.	Up to 10 m thick but typically *c.* 1 m thick. Variable thickness along length of intrusion.	In parts show flow foliation in chilled zones. Locally cleaved, both in marginal zones and throughout whole intrusion.	Smith, 1979; May and Highton, 1997; Peacock *et al.,* 1993; May *et* at., 1992
Small bosses and pods. Also thick sheets.	Bosses typically 20 m to 50 m across. Sheets mainly in range 2 m to 10 m across.	Foliated in part, particularly at margins.	Smith, 1979; May and Highton, 1997
Dykes and sheets, mainly dipping moderately to the south-east and steeply to north-west.	Dykes typically < 1 m thick, sheets commonly around 5 m thick , but up to 15 m.	Oblique internal schistosity common. Recrystallized to greenschist.	Smith, 1979; Peacock *et al.,* 1992; May and Highton, 1997
Veins and vein networks. No obvious preferred orientation.	Typically up to 1 m in width but locally thicker.	Not foliated.	Johnstone and Mykura, 1989
Discrete veins, sheets and larger bodies, which show a general north-east alignment.	Veins from a few centimetres up to tens of metres thick. Larger masses up to several hundred metres across.	Not foliated.	Fettes and Macdonald, 1978
Dykes commonly aligned east-west.	1 m to 10 m wide (average 4 m) in Kintail swarm.	Not foliated.	May *et al.,* 1992

Dykes with chilled margins. Commonly altered mineralogy.	Range from 0.2 m to 6 m. Average thickness *c.* 3 m.	Not foliated.	Smith, 1979
Dykes with chilled margins. Dykes subvertical. Trend east-west in north and ENE in Ardgour swarm and south-east in Ross of Mull.	Average thickness *c.* 1 m.	Not foliated.	Rock, 1983
Dykes with chilled margins, commonly vesicular.	Commonly 0.3 m to 2 m thick but averages 4.5 m in Morar and can be 10 m or more.	Not foliated.	Speight *et* at, 1982

(Table 7.2) Deformation sequences in the Moine (Central) area. Note that structural events do not correlate simply across different areas.

Ramsay, 1960, 1963 Moine & Lewisianoid rocks: Glenelg–Arnisdale area		Barber and May, 1976 Western unit of Glenelg–Attadale Lewisianoid inlier		May *et al.,* 1993 Moine rocks of Killilan Forest (Sheet 72W, Kintail)		Tobisch *et al.,* 1970 Moine rocks:- Glen Affric to Strathconon	
		$D6_L$	Monoclinal folding.			Affric	Open to close, minor and medium-scale folding. Axial planes swing in strike from east in Glen Strathfarrar to NNE in Glen Affric and are subvertical or dip steeply south.
D4	Conjugate minor folds adjacent to Moine Thrust.	$D5_L$	Minor folding in Thrust Belt and Moine succession.				
		$D4_L$	Mylonitization and ESE-plunging lineation.				
D3	Open to tight major and minor folding. N-trending axial planes. Low plunge. Coaxial crenulations.			D3M	Major folding with SE-plunging axes.	Monar	Open to tight major and minor folding on NE-trending axial planes. Related schistosity and crenulation cleavage. Axial plunge commonly to the south-west but locally variable.

		Orrin	Open to tight, rarely isoclinal, major and minor folding. Local axial-plane schistosity and segregations. Gently to steeply W- and SW-plunging axes and lineation. Confined to upper parts of Glens Cannich, Strathfarrar and Orrin.
	Growth of hornblende porphyroblasts.	Strathfarrar	Tight to isoclinal major folds. Axial planes strike north to north-west and axes dip steeply north and south. Confined to middle part of Glen Strathfarrar.

D2	Tight major and minor folding and penetrative axial-plane schistosity.	$D3_L$	SE-plunging folds and rodding.	$D2_M$	Reclined folding with ESE- to SE-trending mineral lineation and rodding. Major sliding and stacking of thrust sheets. Develop- ment of Baggy zones and mylonites in the west. Migmatization of the Boc Mor Psammite and formation of the quartz-biotite rock in some slide zones. Amphibolite-facies metamorphism.	Cannich	Tight to isoclinal major and minor folding. Penetrative axial-planar schistosity trends north-east and dips south-east. Axial plunges tend to be steep but are rather variable in orientation. Moderate south-west plunge is common. Amphibolite-facies metamorphism.
D1	Tight to isoclinal, major and minor folds. Inter-leaving of Lewisianoid and Moine rocks.	$D2_L$	NE-plunging minor folds and rodding abundant. Moderately SE-dipping axial-plane foliation.				
		$D1_L$	Interbanding of Moine and Lewisian.	$D1_M$	Minor isoclinal folding with axial-plane schistosity and rodding lineation. Amphibolite-facies metamorphism.	Pre-Cannich	Tight to isoclinal minor folding. Bedding-parallel schistosity. Intersection lineation. Amphibolite-facies metamorphism.

(Table 8.1) Moine Stratigraphy in North Morar.

Glenfinnan Group

Lochailort Pelite Formation — Gneissose pelite and semipelite with subordinate psammite and quartzite beds. Amphibolite sheets and calc-silicate lenses.

Morar Group

Upper Morar Psammite Formation	Feldspathic and siliceous psammite and subsidiary semipelite. Excellent cross-bedding and loading structures. Calc-silicate layers and lenses.
Morar Striped and Pelitic Schist Formation	Dark-grey fine-grained semipelite and striped pelite—psammite units with abundant calc-silicate layers and lenses.
Lower Morar Psammite Formation	Siliceous to micaceous psammite, commonly arkosic, with pebbly and gritty beds. Heavy-mineral bands common. Interbedded pelitic units.
Basal Pelite Formation	Mixed, thinly bedded, schistose pelite, semipelite, and micaceous to feldspathic psammite.

References

Event	Northern region	Central region	Reference
Laxfordian metamorphism	1750–1670 Ma	1750–1670 Ma	Corfu *et al.* (1994); Kinny and Friend (1997); Zhu *et al.* (1997a,b)
granite sheets	1855 Ma		Friend and Kinny (2001)
Scourie dyke emplacement	no age data	2020–1920 Ma	Heaman and Tarney (1989); Waters *et al.* (1990)
		2420–2400 Ma	Heaman and Tarney (1989); Corfu *et al.* (1994)
Inverian metamorphism and deformation	no evidence found for Inverian event	Scourie 2490–2480 Ma	Corfu *et al.* (1994); Friend and Kinny (1995); Kinny and Friend (1997); Zhu *et al.* (1997a,b)
		2530 Ma	
		Gruinard Bay no evidence found of Inverian event	Corfu *et al.* (1998); Kinny and Friend (1997)
Badcallian deformation and granulite-facies metamorphism		Scourie 2760–2710 Ma	Corfu *et al.* (1994); Zhu *et al.* (1997a,b)
igneous protolith (TTG)	2680 Ma (diorite)	Scourie 3030–2960 Ma	Friend and Kinny (2001); Friend and Kinny (1995)
		Gruinard Bay 2736–2726 Ma ('trondhjemite')	Corfu *et al.* (1998)
	2840–2800 Ma	2825–2790 Ma (mafic rocks)	Kinny and Friend (1997)
		2850–2750 Ma	Whitehouse *et al.* (1997) Love *et al.* (2004)

(Table 3.1) Summary of isotopic ages from the Lewisian Gneiss Complex of the Northern and Central regions of mainland Scotland.

1. Deposition of arenaceous and argillaceous Moine sediments unconformably upon Lewisianoid gneiss basement.
2. Emplacement of early tholeiitic igneous intrusives (now represented by the Bettyhill Suite amphibolites). These include the Ard Mor Amphibolite.
3. **D1**: Upper amphibolite-facies metamorphism producing gneissose layering (S1) and extensive lit-par-lit regional migmatization. Early mafic intrusives deformed and metamorphosed to foliated garnet amphibolites.
4. **D2**: Development of tight NW- and SE-plunging (F2) folds and associated strong mineral extension lineation L2. Some folds show extreme curvilinearity, associated with distinct zones of high strain. Retrogression of D1 mineral assemblages in some 'early' amphibolites and imposition of D2 fabric. Movement along Naver Thrust Zone. Partial melting of gneisses at the end of this event to produce foliated (G2) granite sheets (early phases of the Torrisdale Vein-Complex). U-Pb zircon dating suggests an Early Ordovician age (Kinny *et al.*, 1999).
5. **D3**: Upright, tight SE-plunging (F3) folds with steep E-dipping axial surfaces, largely coaxial with F2 folds. Associated extension, intersection and pronounced rodding lineation (L3). Coaxial F2–F3 refolds. Further retrogression and foliation of 'early' amphibolites.
6. Syn-D3 emplacement of the Clerkhill Intrusion followed by generation of foliation and folding of foliated appinitic amphibolite sheets. U-Pb zircon dating suggests Mid-Silurian age.
7. Emplacement of post-F3 microdiorites and unfoliated (G3) pegmatites and granites of the Torrisdale Vein-Complex.
8. **D4**: Localized brittle folding, faulting and development of en echelon tension gashes.
9. Emplacement of cross-cutting (G4) microgranites as well as porphyritic microgranite and lamprophyric sheets.

(Table 6.1) Sequence of tectonometamorphic events recognized in the Naver Nappe.

Name of swarm/ sub-suite/suite	Age	Area of occurrence	Abundance	Rock types	Nature and trend of intrusion	Thickness of intrusion	Deformation	Reference
Quartzose Amphibolite	Upper Ordovician	Near Fort Augustus.	Local	Quartzose amphibolite, tonalite	Elliptical masses, elongated north-east, rarely dykes. Found within Fort Augustus Granite Gneiss.	Bodies up to 1 km long but also as smaller pods. Rare dykes c. 5 m thick.	Low	May and Highton, 1997
Glen Mortston Vein-Complex	Upper Ordovician	In Glen Mortston, extending north to Strathglass.	Abundant	Muscovite-biotite granite, aplitic and pegmatitic granite	Lenticular sheets, veins, mainly concordant. Thicker sheets trend north-east.	From a few cm up to 40 m thick, but typically < 2 m thick.	Foliated, folded, boudinaged.	May and Highton, 1997
Loch Bi Granite Vein-Complex	Late Silurian	West end of Loch Bi, Glen Fiosnelghe.	Abundant	Granite, including aplitic and pegmatitic granite	Ramifying network, no preferred orientation.	Seldom > 2 m thick, rarely larger bodies.	Only minor deformation.	Fettes and Macdonald, 1978
Loch Arkaig Granite Vein-Complex	Late Silurian	Centered on Meall Blair north of Loch Arkaig.	Abundant	Granite, including aplitic and pegmatitic granite	Ramifying network, no preferred orientation.	Seldom > 2 m thick, rarely larger bodies.	Only minor deformation.	Fettes and Macdonald, 1978
Mullie Granite Vein-Complex	Late Silurian	In Glen Mullie, south of Loch Arkaig.	Abundant	Granite, including aplitic and pegmatitic granite. Includes small granodiorite body	Ramifying network, no preferred orientation.	Seldom > 2 m thick, rarely larger bodies.	Only minor deformation.	Fettes and Macdonald, 1978
porphyritic microgranodiorite ('Felsic Porphyrites')	Late Silurian	Channic area, upper Glen Mortston.	Moderately abundant	Porphyritic microgranodiorite	Dykes and sheets, trending approximately east-west. Some irregular bodies.	Typically c. 2 m thick but up to 5 m recorded.	Weakly schistose and recrystallized.	Peacock *et al.*, 1968; May and Highton, 1997
Microdiorite Sub-suite	Late Silurian	Widespread across Moine outcrop south of Glen Mortston to the Sound of Mull. Also present in Ross-shire.	Very abundant, reaching maximum concentration in central zone between Channic and Salen	Range from microgranodiorite to melanocrodiorite	Sheets and dykes with chilled margins. Mineral assemblages altered and in part recrystallized under greenschist- or epidote-amphibolite-facies conditions. Some irregular sheets in west coastal area exhibit largely unmodified igneous textures and mineralogies. Most sheets dip moderately south-east, but swarms of NNE- and E-W-trending sheets can be distinguished locally.	Up to 30 m thick but typically c. 1 m thick. Variable thickness along length of intrusion.	In parts show flow foliation in chilled zones. Locally sheared, both in marginal zones and throughout whole intrusion.	Smith, 1979; May and Highton, 1997; Peacock *et al.*, 1968; May *et al.*, 1992
Appinitic Suite	Late Silurian	Widespread across the Moine outcrop but concentrated in Smeorbhan–Kinloch–Moidart area and in Glen Garry. Associated with the Strontian Pluton. Sparse to north of Glen Affric and Glen Shiel.	Abundant within closures	Mainly coarse-grained hornblende-biotite but range from monzonite to pyroxene- and olivine-bearing hornblendite-rich ultramafic rocks	Small bosses and pods. Also thick sheets.	Bosses typically 30 m to 50 m across. Sheets mainly in range 2 m to 10 m across.	Foliated in part, particularly at margins.	Smith, 1979; May and Highton, 1997
porphyritic microgranodiorite ('Main Felsic Porphyries')	Late Silurian	From Glen Affric south-west via Channic, Loch Arkaig and Loch Shiel down to Loch Aline on the Sound of Mull.	Abundant	Porphyritic microgranodiorite ranging to quartz microdiorites	Dykes and sheets, mainly dipping moderately to the south-east and steeply to north-west.	Dykes typically < 1 m thick, sheets commonly around 5 m thick , but up to 15 m.	Oblique internal schistosity common. Recrystallized to greenschist.	Smith, 1979; Peacock *et al.*, 1968; May and Highton, 1997
Banavie Vein-Complex	Late Silurian	Adjacent to the Great Glen south of Loch Lochy. Extends up to 5 km north-west of Great Glen Fault.	Abundant	Granite and subsidiary aplitic granite and quartz feldspar pegmatite veins	Veins and vein networks. No obvious preferred orientation.	Typically up to 1 m in width but locally thicker.	Not foliated.	Johnstone and Stykarz, 1989
Glen Garry Vein-Complex	Late Silurian	From Channic south-east to Loch Lochy, centred on Glen Garry.	Abundant	Mostly medium- to coarse-grained granodiorite, but ranging from quartz diorite to monzogranite	Discrete veins, sheets and larger bodies, which show a general north-east alignment.	Veins from a few centimetres up to tens of metres thick. Larger masses up to several hundred metres across.	Not foliated.	Fettes and Macdonald, 1978
microgranite swarm ('felsites')	Early Devonian	Widespread but only abundant in swarm east of Ratagain Pluton.	Not abundant except in Ratagain swarm	Microgranite and microgranodiorite, locally porphyritic	Dykes commonly aligned east-west.	1 m to 10 m wide (average 4 m) in Kintail swarm.	Not foliated.	May *et al.*, 1992
Lamprophyre Sub-suite	Early Devonian	Widespread but concentrated in Ratagain swarm stretching from Loch Hourn north-east through Kintail to Glen Affric and Glen Cannich. Dykes extend west of Moine Thrust on Skye and in Applecross area.	Not abundant except in Ratagain swarm	Pyroxene minette, but some vogesite and rare acmeaite	Dykes with chilled margins. Commonly altered mineralogy.	Range from 0.2 m to 6 m. Average thickness c. 3 m.	Not foliated.	Smith, 1979
camptonite-monchiquite suite	Permo-Carboniferous	Widespread but concentrated in swarms – Morar, Killilan, Moidart, Ed-Arkaig, Ardgour and Isles-Rum of Mull.	Locally abundant	Camptonite and camptonite basalt mainly, rare monchiquite	Dykes with chilled margins. Dykes subvertical. Trend east–west in north and ENE in Ardgour swarm and south-east in Rum of Mull.	Average thickness c. 1 m.	Not foliated.	Rock, 1983
Palaeogene dykes, mainly of the Skye, Mull, and Ardnamurchan swarms	Palaeocene to Early Eocene	Widespread on Skye and west coast south of Loch Nevis.	Locally abundant	Dolerite, basalt	Dykes with chilled margins, commonly vesicular.	Commonly 0.5 m to 2 m thick but averages 4.5 m in Morar and can be 10 m or more.	Not foliated.	Speight *et al.*, 1982

(Table 7.1) Caledonian and later minor intrusions — Moine (Central) and Moine (South) areas.

Ramsay, 1960, 1963		Barber and May, 1976		May *et al.*, 1993		Tobisch *et al.*, 1970	
Moine & Lewisianoid rocks: Glenelg–Arnisdale area		Western unit of Glenelg–Attadale Lewisianoid inlier		Moine rocks of Killilan Forest (Sheet 72W, Kintail)		Moine rocks:– Glen Affric to Strathconon	
		$D6_L$	Monoclinal folding.			Affric	Open to close, minor and medium-scale folding. Axial planes swing in strike from east in Glen Strathfarrar to NNE in Glen Affric and are subvertical or dip steeply south.
D4	Conjugate minor folds adjacent to Moine Thrust.	$D5_L$	Minor folding in Thrust Belt and Moine succession.				
		$D4_L$	Mylonitization and ESE-plunging lineation.				
D3	Open to tight major and minor folding. N-trending axial planes. Low plunge. Coaxial crenulations.			$D3_M$	Major folding with SE-plunging axes.	Monar	Open to tight major and minor folding on NE-trending axial planes. Related schistosity and crenulation cleavage. Axial plunge commonly to the south-west but locally variable.
						Orrin	Open to tight, rarely isoclinal, major and minor folding. Local axial-plane schistosity and segregations. Gently to steeply W- and SW-plunging axes and lineation. Confined to upper parts of Glens Cannich, Strathfarrar and Orrin.
			Growth of hornblende porphyroblasts.			Strathfarrar	Tight to isoclinal major folds. Axial planes strike north to north-west and axes dip steeply north and south. Confined to middle part of Glen Strathfarrar.
D2	Tight major and minor folding and penetrative axial-plane schistosity.	$D3_L$	SE-plunging folds and rodding.	$D2_M$	Reclined folding with ESE- to SE-trending mineral lineation and rodding. Major sliding and stacking of thrust sheets. Development of flaggy zones and mylonites in the west. Migmatization of the Boc Mor Psammite and formation of the quartz-biotite rock in some slide zones. Amphibolite-facies metamorphism.	Cannich	Tight to isoclinal major and minor folding. Penetrative axial-planar schistosity trends north-east and dips south-east. Axial plunges tend to be steep but are rather variable in orientation. Moderate south-west plunge is common. Amphibolite-facies metamorphism.
D1	Tight to isoclinal, major and minor folds. Interleaving of Lewisianoid and Moine rocks.	$D2_L$	NE-plunging minor folds and rodding abundant. Moderately SE-dipping axial-plane foliation.				
		$D1_L$	Interbanding of Moine and Lewisian.	$D1_M$	Minor isoclinal folding with axial-plane schistosity and rodding lineation. Amphibolite-facies metamorphism.	Pre-Cannich	Tight to isoclinal minor folding. Bedding-parallel schistosity. Intersection lineation. Amphibolite-facies metamorphism.

Deformation sequences in the Moine (Central) area. Note that the structural events do not correlate simply across different areas.

Lewis and Harris		North and South Uist, Barra	
Rock type	***Structure and tectonic event***	***Rock type***	***Structure and tectonic event***
Fault gouge, breccia, some cataclasite.	Steep faulting of Devonian, Carboniferous and Mesozoic age related to uplift and basin formation. Formation of Minch Fault.	Fault gouge, breccia, some cataclasite.	Steep faulting related to uplift and basin formation in the Devonian and Carboniferous. Dextral strike-slip on WNW-trending faults of Mesozoic age.
Phyllonite and mylonite. Folding of pre-existing mylonites. Crenulation cleavage. Lower greenschist-facies mineralogies.	Extension with top-to-the-E movements down-dip of mylonite belts. Probably of late Silurian or Early Devonian age. Related hydrous retrogression in OHFZ and footwall gneisses.	Phyllonite, mylonite, planar gouges.	Extension with top-to-the-ENE/E movements focused along mylonite belt margins. Probably of late Silurian or Early Devonian age.
Phyllonite and mylonite. Greenschist-facies mineralogies (biotite).	Thrust zones with movement towards the WNW. Attributed to sinistral strike-slip movements by some authors. Late Silurian (Scandian) age.	Phyllonite and mylonite. Greenschist-facies mineralogies (biotite).	Thrust zones with movement towards the WNW and possibly south-west. Attributed to sinistral strike-slip movements (top-to-the-NE) by some authors. Late Silurian (Scandian) age.
Pseudotachylite breccia and 'Mashed Gneiss'. Cataclasite and ultracataclasite zones. Gneisses with marked cataclastic and protomylonitic fabric.	Main thrust zones and lensoid zones of fault rock. Formed in relatively dry gneisses but now commonly retrogressed. Reflect major top-to-the-WNW thrust movements with multiple seismic movements. Mainly of late Silurian age (Scandian Event).	Pseudotachylite breccia and 'Mashed Gneiss'. Gneiss with marked cataclastic and protomylonitic fabric.	Well-defined western bounding thrust to OHFZ showing top-to-the-WNW movement. Some defined thrusts and areas of pseudotachylite development west of OHFZ. Local movement sense more variable. Probably of Late Silurian age (Scandian Event), but parts may be considerably older.
None identified.	Meso/Neoproterozoic Torridon Group sedimentary rocks preserved at depth in Minch Basin. Sequence thickest in hangingwall of OHFZ implying extensional movement along the fault zone at *c.* 1000 Ma.	None identified.	Meso/Neoproterozoic Torridon Group sedimentary rocks preserved at depth in Minch Basin. Sequence thickest in the hangingwall of OHFZ implying extensional movement along the fault zone at *c.* 1000 Ma.
Mylonitic gneisses.	Dextral oblique shear zone postulated in the Langavat Belt offsetting earlier elements of the OHFZ. Biotite cooling ages imply movement at *c.* 1100 Ma (Grenvillian).	No equivalent fault rocks identified.	
Mylonite, ultramylonite pseudotachylite and cataclasite. Lower amphibolite-grade mineralogies.	Mainly small-scale shallow E-dipping thrust zones with top-to-the-WNW sense of movement. Focused in part on Laxfordian granite sheets. Age of between 1550 Ma and 1100 Ma postulated.	No equivalent fault rocks identified.	

(Table 2.2) Rock types and kinematic history of the Outer Hebrides Fault Zone (OHFZ). Based on information from Fettes et al. (1992), MacInnes et al. (2000) and Imber et al. (2001).

Glenfinnan Group	
Lochailort Pelite Formation	Gneissose pelite and semipelite with subordinate psammite and quartzite beds. Amphibolite sheets and calc-silicate lenses.
Morar Group	
Upper Morar Psammite Formation	Feldspathic and siliceous psammite and subsidiary semipelite. Excellent cross-bedding and loading structures. Calc-silicate layers and lenses.
Morar Striped and Pelitic Schist Formation	Dark-grey fine-grained semipelite and striped pelite–psammite units with abundant calc-silicate layers and lenses.
Lower Morar Psammite Formation	Siliceous to micaceous psammite, commonly arkosic, with pebbly and gritty beds. Heavy-mineral bands common. Interbedded pelitic units.
Basal Pelite Formation	Mixed, thinly bedded, schistose pelite, semipelite, and micaceous to feldspathic psammite.

(Table 8.1) Moine stratigraphy in North Morar.