
Excursion planner

The localities covered by the excursions in this guide are shown on the Excursion Planner map (Map) together with the main roads. A list of the excursions gives a general indication of the time required for each excursion, but the actual time taken depends on the size and speed of the party, and time spent looking for fossils. Weather conditions and the need for 'refreshment' can either extend or shorten time spent looking at the rocks. On the excursion maps 'H' indicates a convenient hostelry! Some of the excursions are subdivided into itineraries and have several access points so that it is possible to plan short routes, or to combine parts of more than one excursion to suit the needs of the party.

Coastal excursions, particularly those on the Jurassic rocks, require half to low tide to see features exposed on the wave-cut platform. In rough weather with an onshore wind some sections may not be safely accessible. At all times great care should be taken; wet grass and rocks in cliff areas are frequently very slippery. Tide times are printed in the local newspaper (Press and Journal) or tide tables can be consulted.

In late autumn and winter lack of daylight becomes a problem, with sufficient light for detailed work only available between 9 am and 3.30 pm. However, at midsummer the days are very long!

The main towns are Golspie, Brora and Helmsdale in the south of the area covered, and Wick and Thurso in the north. Helmsdale and Thurso are considered the best centres at which to stay. Tourist information is available in season in the main towns, or from VisitScotland through visithighlands.com where accommodation can be booked online.

Maps

The following geological and topographic maps cover the localities described in this guide. Topographic maps are generally available from bookshops and tourist offices, and geological maps are stocked by the Orcadian Stone Company in Golspie, or can be obtained from the British Geological Survey, Murchison House, West Mains Road, Edinburgh. Maps and other geological output can be ordered online from the BGS Bookshop, and maps and other information is increasingly available from BGS in digital format.

Geological maps published by the British Geological Survey (BGS)

BGS 1:625 000 North sheet (covers the whole of Scotland).

BGS Sheet 58N 04W 1:250 000 Caithness (New series incorporating offshore geology).

BGS 1:50 000 Series

Sheet 103 Golspie

Sheet 110 Latheron

Sheet 116E Wick

Sheet 116W Thurso

Sheet 115E Reay

Sheet 115W (Not available)

BGS 1:25 000 Geology Series

Dounreay (bedrock)

Topographic maps

Ordnance Survey 1:50 000 Series

Sheet 10 Strathnaver

Sheet 11 Thurso and Dunbeath

Sheet 12 Thurso and Wick

Sheet 17 Helmsdale and Strath of Kildonan

(There is considerable overlap between sheets 11 and 12, sheet 12 being the best value for Excursion 5.)

Major topics covered by excursion guides

In the following list the main features covered by each excursion are presented in note form to enable the reader to scan the list for items of particular interest. This list can be used in conjunction with the locality map and list of times required for excursions. Composite excursions can then be constructed to cater for the interests of the party within the time available.

1. Trias to Lias

2. Brora Coal Formation to Balintore Formation

Itinerary 1 Brora Coal to Brora Arenaceous Fm. Brora Foreshore.

Itinerary 2 Brora Arenaceous Fm. S. bank of Brora River.

Itinerary 3 Brora Argillaceous Fm. N. bank of Brora River.

Itinerary 4 Balintore Fm. N. foreshore at Brora.

3. Upper Jurassic sedimentation controlled by the Helmsdale Fault

Itinerary 1 Kintradwell Boulder Beds, soft sediment deformation.

Itinerary 2 Sandy submarine 'turbidite fan' deposits, Allt na Cuile Sst.

Itinerary 3 'The Fallen Stack'; boulder beds and clast stratigraphy. Itin 4 Helmsdale Boulder Beds; Helmsdale Fault Zone.

4. Lower ORS and relation to Helmsdale Granite

5. Old Red Sandstone of Caithness

Itinerary 1 Achanarras fish bed at Achanarras Quarry, lacustrine laminites, lacustrine margin at Dirlot.

Itinerary 2 John o' Groats Sandstone, Wick Flagstones at Wick, Sarclet Group at Sarclet Haven.

Itinerary 3 Middle ORS cyclicity. Brims Ness, Holburn Head fish bed,

Pennyland Shore at Thurso, Dunnet Sandstone.

Itinerary 4 Basin margin deposits at Red Point, Port Skerra and Baligill; ORS on Moine basement. Sandside Bay, marginal lacustrine and aeolian.

6. Gold panning. Moine basement

Guide to times required for excursions

The times quoted do not include driving times to the starting point. Times allow for discussion and close examination of the rocks — a quick look-see' excursion will take less time.

1. Golspie, Triassic–Lower Jurassic

2–3 hours. Low tide required.

2. Brora, Middle–Upper Jurassic

Itinerary 1. 3 hours. Low tide required for Localities 1, 2

Itinerary 2. 3 hours

Itinerary 3. 3 hours

Itinerary 4. 1 hour. Low tide required

3. Kintradwell–Helmsdale Upper Jurassic

Itinerary 1. 2 hours. Low tide required

Itinerary 2. 4 hours for full excursion. Low tide required for localities 3, 5, 6.

Itinerary 3. 2 hours. Low tide required

Itinerary 4. 1–2 hours for localities 1–4; half day for localities 1–9. Low tide required for all localities.

4. Ousdale Lower ORS

2 hours. Can be done en route to Excursion 5, Itinerary 1 from Helmsdale.

5. Caithness Old Red Sandstone

Itinerary 1. Achanarras, Dirlot. Half day minimum, but much longer if searching for fossil fish.

Itinerary 2. John o' Groats, Wick Sarclet. 1 Day. Low tide required at John o' Groats for localities 6, 7, 8.

Itinerary 3. Brims Ness to Dunnet Head. 1 Day. Low tide required for Brims Ness (Locality 11); Pennyland Shore, Thurso (Locality 13) and Clett Harbour (Locality 15).

Itinerary 4. Strathy to Red Point and Sandside Bay 1 Day. Low to half tide advisable for Port Skerra (Locality 18) and Sandside Bay.

6. Kildonan Gold

Half day minimum. Depends on time spent gold panning.

Brief highlights and potential problems

For those visiting the area for the first time, and those with limited time at their disposal, the following might be considered the highlights of the area, and the associated problems.

Jurassic

Lias at Golspie (Excursion 1)

Poor exposure due to sand cover in intertidal area.

Brora Coal to Balintore Fms. (Excursion 2)

Itinerary 1 and Itinerary 4 cover most of the succession, exposure is mainly on the foreshore amongst boulders, hence there are problems with seaweed and sand cover. River exposures (Itineraries. 2, 3) are particularly useful if tides are too high.

Upper Jurassic fault controlled sedimentation (Excursion 3) Kintradwell Boulder Beds. Itinerary 1.

Sandy delta-derived Tan' deposits of Allt na Cuile Sst. Itinerary 2, Localities 4–6.

'Fallen stack' at Portgower. Itinerary 3, Locality 4.

Helmsdale Boulder Beds. Itinerary 4, Localities 1–4.

All shore exposures are subject to variable sand cover and seaweed in late summer.

Devonian (Excursions 4 and 5)

Lower ORS. Ousdale arkose and Ousdale Mudstones. Excursion 4. Sarclet Group. Excursion 5, Itinerary 2.

Achanarras fish bed, Achanarras Quarry. Excursion 5, Itinerary 1.

Lacustrine margin, stromatolite coated breccia, Dirlot Castle. Excursion 5, Itinerary 1.

Wick Flagstones sedimentology and cycles, South Head Wick. Excursion 5, Itinerary 2.

Middle ORS cycles. Brims Ness and Thurso Shore. Excursion 5, Itinerary 3. Low tide needed.

Upper ORS fluvial deposits, Dunnet Head. Excursion 5. Itinerary 3.

Lacustrine margin unconformity at Red Point and Port Skerra. Excursion 5. Itinerary 4.

Aeolian sandstones and flagstone cyclicity, Sandside Bay. Excursion 5 Itinerary 4.

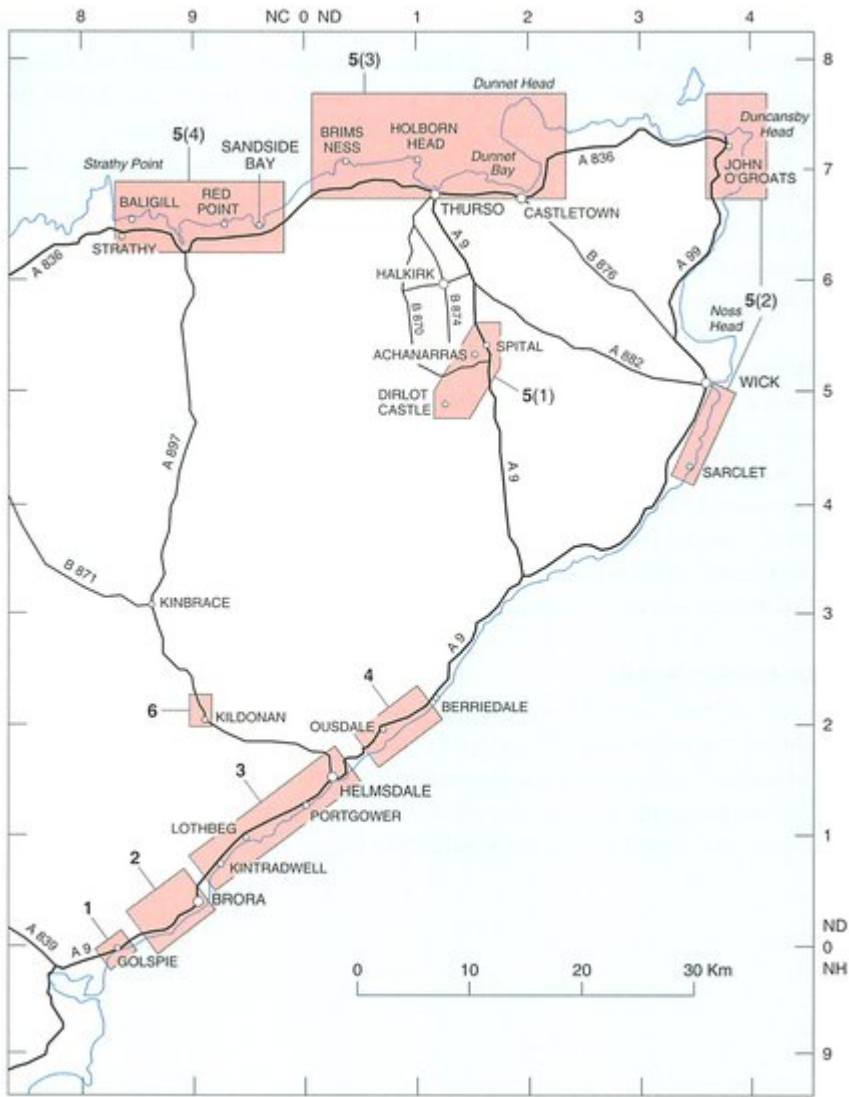
Basement and mineralisation

Gold at Kildonan. Excursion 6. (Problem, not a lot of gold)

Basement Geology. Moines and intrusives. Excursion 6.

Basement also seen at Baligill, Port Skerra and Red Point. Excursion 5, Itinerary 4.

References



Excursion Localities

1 Golspie; **2** Brora; **3** Kintradwell to Helmsdale; **4** Ousdale; **5** Caithness; **6** Kildonan.

(Figure Unnumbered 1) Excursion localities 1 Golspie; 2 Brora; 3 Kintradwell to Helmsdale; 4 Ousdale; 5 Caithness; 6 Kildonan.