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# Cainozoic geology and landscape evolution of north-east Scotland

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(Front cover)

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This appendix describes many of the key localities in the district from which the history of events spanning the Palaeogene, Neogene and Quaternary has been pieced together (Figure A1.1); (Table A1.1). The solid geology is shown in (Figure 2). Many of the localities have been researched for over a century and most have been described relatively recently in a number of publications. A summary of research at these sites, which concentrates on establishing the local stratigraphical succession and its interpretation, is given below. However, most accounts include some hitherto unpublished information particularly on dating. Sites such as Glenbervie, Rothens, Nether Daugh and Balnakettle have not been reported elsewhere and are described more fully here. The lithostratigraphy follows that outlined in Chapter 8 and presented in (Table 7), and commonly introduces names recently entered into the 'BGS lexicon of named rock unit definitions and index of computer codes' (British Geological Survey, 2002) in order to adhere more closely to internationally agreed guidelines on lithostratigraphical nomenclature.

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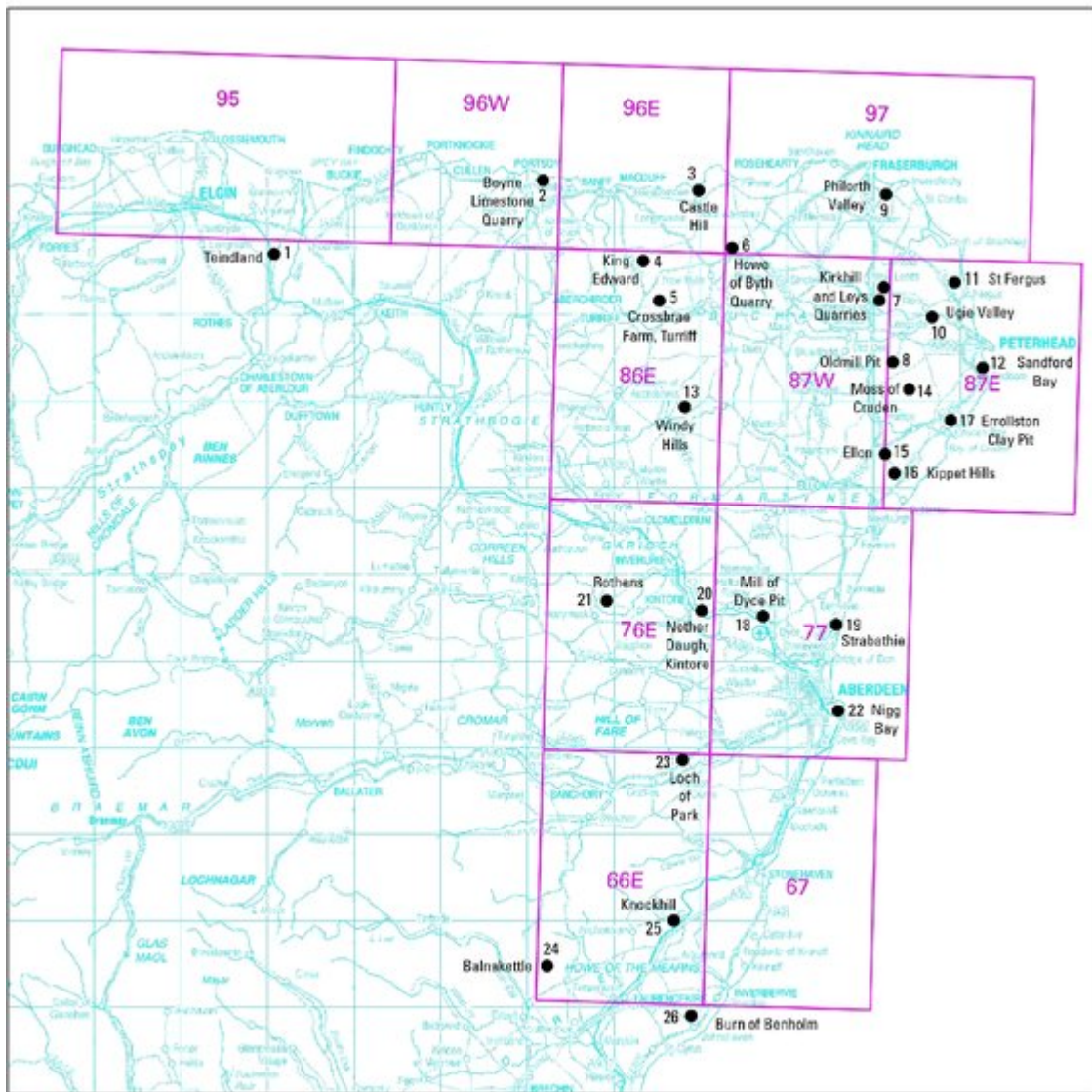
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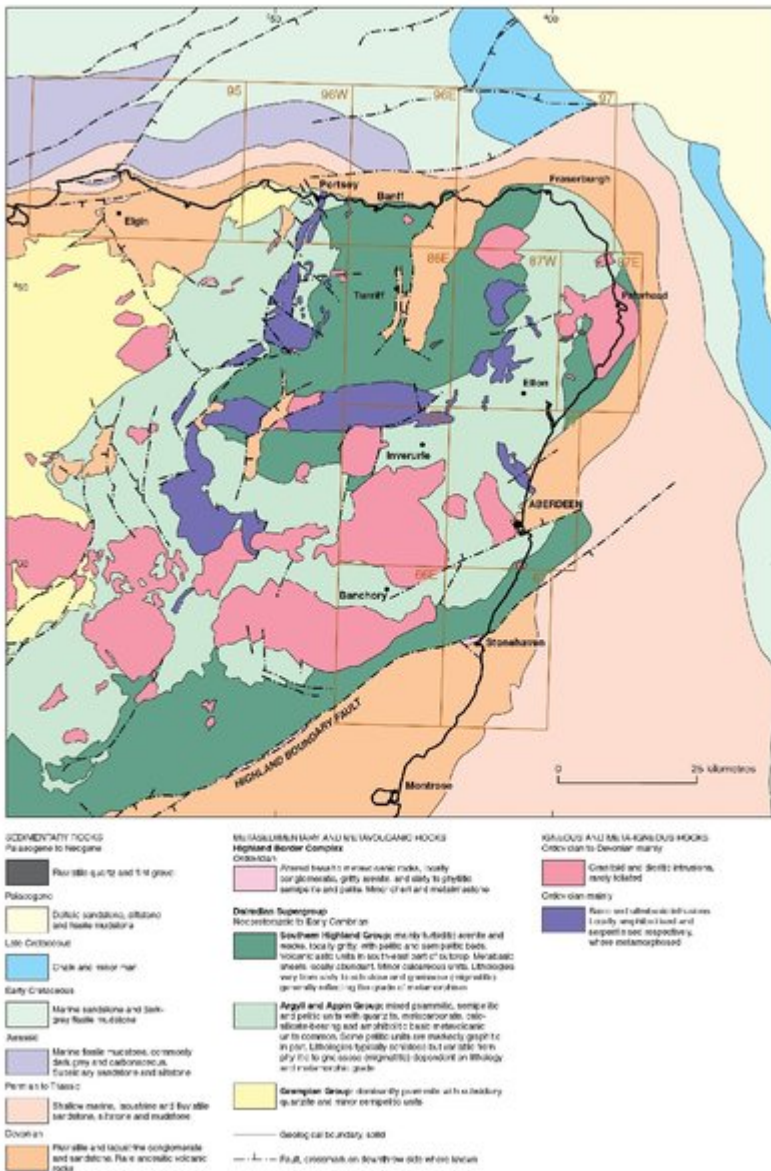
*(Front cover) Cover photograph: Crovie Village (D6116). Sandstones and conglomerates of the Lower Devonian Crovie Group crop out on the foreshore and are down-faulted against Dalradian rocks of the Macduff Slate Formation that form the headland at the far end of the village. The landslide scar beyond the red telephone box exposes fine-grained deposits of the Kirk Burn Silt Formation of the Banffshire Coast Drift Group.*



(Figure A1.1) Locations of sites described in Appendix 1.

Site number	Site name	Site characteristics and significance
1	Teindland	Long sequence; 4 tills; Ipswichian palaeosol; luminescence dated sand
2	Boyne Limestone Quarry	Mesozoic rafts; glaciectonites; 3 tills one shelly;
3	Castle Hill, Gardenstown	Whitehills Glacigenic Formation with OIS 2/3 shells Mesozoic rafts; glaciectonites; 3 tills one shelly; Whitehills Glacigenic Formation with OIS 2/3 shells; capped by glaciolacustrine Kirkburn Silt Formation
4	King Edward	Rafted OIS 3/4 shelly deposits
5	Crossbrae Farm, Turriff	Early Devensian peat bed; gelifluctates
6	Howe of Byth Quarry	Windermere Interstadial peat; OIS 2 till; OIS 3 gravel (luminescence dated)
7	Kirkhill and Leys quarries	Longest sequence in region; 2 palaeosols; 5 gelifluctate beds; three 100 ka cycles represented (3 tills)
8	Oldmill pit	Mesozoic rafts; glaciectonites; 2 tills, old gravel
9	Philorth valley	Estuarine deposits and peat; Holocene sea level change
10	Ugie valley	Glacial Lake Ugie and possible mid OIS 2 readvance; tundra polygons
11	St Fergus	Raised OIS 2 glaciomarine silts and late readvance; tundra polygons
12	Sandford Bay	Logie-Buchan Drift Group deformation tills and clays on 'local' till with sparse Norwegian erratics
13	Windy Hills	Neogene quartzite gravels; tills and gelifluctates; GPR traverse
14	Moss of Cruden	Devonian Smallburn Sandstone Formation outlier Lower Cretaceous Moreseat Sandstone Formation outlier Neogene Buchan Ridge flint/quartzite gravels Camp Fault; Early Devensian peat bed, 2 tills
15	Ellon (Bellscamphie)	'indigo' shelly till; long sequence with 4 tills
16	Kippet Hills (Slains)	Esker; Logie-Buchan Drift Group; early Pleistocene shells
17	Errollston Clay Pit	Logie-Buchan Drift Group deformation tills and clays
18	Mill of Dyce pit	Deglaciation of lower Don valley; deltaic sequence
19	Strabathie, Bridge of Don	Deltaic sequence formed during parting of ice streams
20	Nether Daugh, Kintore	Meander infill; late Holocene environmental change
21	Rothens, Monymusk	Kettle hole infill; Late-glacial sequence
22	Nigg Bay, Aberdeen	Long sequence including elements of four drift groups
23	Loch of Park, Banchory	Late-glacial to Holocene pollen sequence
24	Balnakettle, Fettercairn	Tectonised sequence; late readvance of East Grampian ice
25	Knockhill, Glenbervie	Windermere Interstadial peat bed under landslipped till
26	Burn of Benholm	Red till on Early Devensian peat on shelly diamicton

(Table A1.1) Sites described in Appendix 1.



(Figure 2) Solid geology of the district.