

Land use, Cainozoic of north-east Scotland

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Merritt, J W, Auton, C A, Connell, E R, Hall, A M, and Peacock, J D. 2003. Cainozoic geology and landscape evolution of north-east Scotland. Memoir of the British Geological Survey, sheets 66E, 67, 76E, 77, 86E, 87W, 87E, 95, 96W, 96E and 97 (Scotland).
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Soils

More than 40 different soil types, grouped into 25 soil associations, have been recognised across the district (Walker et al., 1982). Soils from three areas are described in detail in Soil Survey One-inch sheet memoirs: Sheet 95 Elgin (Grant, 1960); Sheets 86 and 96 Banff, Huntly and Turriff (Glentworth, 1954) and Sheets 77, 76 and 87/97 Aberdeen, Inverurie and Fraser-burgh (Glentworth and Muir, 1963).

Stony, sandy loams are developed on the reddish brown tills and sandstone bedrock of the Moray Firth coastal lowland and on free-draining till slopes flanking the major river valleys. Gravelly loams have formed on many of the glaciofluvial and hummocky glacial deposits. Sandy, gravelly and clayey loams are widely developed in Buchan, where the proportion of gravel, sand and clay in the soil often reflects the nature of the deeply weathered underlying parent material. Thin, coarse, sandy loamy soil, in many places containing large boulders, overlies many tills developed on granite bedrock or outcrops of decomposed granite. The deeply weathered basic igneous rocks around Inch, together with the glacial deposits derived from them, produce highly fertile sandy or sandy clayey loams, while fertile brown forest soils have formed on the reddish brown tills and Old Red Sandstone bedrock of Strathmore. Immature silty and sandy soils, commonly mixed with shingle, are developed on raised beach deposits and spreads of blown sand. Wet mineral soils have developed on alluvial deposits around estuaries, and are exposed in upland areas where peat has been removed.

Agriculture and forestry

The 1:250 000 scale land capability for agriculture map for eastern Scotland (Soil Survey of Scotland, 1983), shows that much of the land in the district is capable of producing good yields of a narrow range of crops, principally cereals and grass. This is true of the Buchan plateau, the major river valleys, the southern coast of the Moray Firth and Strathmore. In these lowland areas, which represent a major part of the main arable belt of Scotland, arable farming is concentrated on the ground generally lying below 100 m OD. A combination of better climate, high agricultural productivity and good natural harbours has led to the concentration of primary population centres along the coastal margins of the district.

North-east Scotland is justly famous for quality of its beef cattle, many of which are raised on improved pastures on the interfluvies between the major rivers. However, each area has its own characteristics, reflecting its differing topography, elevation, climate, bedrock and Quaternary geology. Cattle rearing has been dominant on improved pastures in the foothills of the Grampian Mountains, but sheep farming, shooting and forestry are competing forms of land use on most of the ground above 200 m OD. Apart from the patches of very fertile soil developed on the glacial and fluvial deposits between Inch and Inverurie, there appears to be little regional correlation between

agricultural land capability and the underlying geology on the lower lying ground. This may reflect the lack of erosive power of the ice that traversed the lowlands during successive glaciations. This is particularly evident in the north-eastern part of the district, where gentle slopes and thick weathering profiles are preserved on igneous and metamorphic rocks, as well as in the Quaternary deposits derived from them. Variations in land capability on this low, undulating ground are more likely to reflect the degree of soil improvement (drainage and fertiliser application) that has taken place rather than the nature of the underlying strata. Many of the most productive patches of agricultural land between Inch and Inverurie occur on glaciolacustrine deposits. These produce relatively stone-free silty and sandy soils, which, given adequate drainage, are capable of producing a wide range of crops. Another notable area of very fertile soil occurs on reddish brown clayey till, overlying Lower Devonian mudstones of the Cromlix Formation in Strathmore. Horticulture as well as arable farming has developed on these clayey till soils and also on adjacent sandy alluvial soils in the catchment of the Luther Water.

The link between underlying geology, elevation, aspect and climate and land use capability is more evident in the upland areas. It is well seen on the high ground between the valley of the River Dee and Strathmore, where relatively thin, acidic soils and hill peat are developed on till, here containing a predominance of granitic clasts, or directly on decomposed Mount Battock Granite. Much of this land is only suitable for use as rough grazing, though some of the lower hillsides are capable of supporting improved grazing. In practice, much of the high ground is devoted to shooting and summer grazing of sheep, or is covered by extensive conifer plantations. A similar pattern of land use is present on the acid soils developed on the Hill of Fare and Bennachie granites.

References

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