

Sand and gravel resources, Sheet 95 Elgin, 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). Contributors: J F Aitken, D F Ball, D Gould, J D Hansom, R Holmes, R M W Musson and M A Paul.

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Sheet 95 Elgin



Glacial and glaciofluvial features and the distribution of tills in the Elgin district. P915371.

The spreads of sand and gravel on Sheet 95 ([P915371](#)) constitute some of the most extensive resources in north-east Scotland. They have been assessed in detail only in the vicinity of Garmouth (Resource Sheet NJ 63), but are described more generally by Peacock et al. (1968) and as part of the resources of the Moray district (Peacock et al., 1977).

Much of the glaciofluvial sand and gravel between Elgin and the Spey valley occurs in coarsening-upward sequences that were laid down as fans at the mouths of drainage channels or in temporary

ice-dammed lakes. Overall, these deposits fine north-eastwards and much of the sequence comprises silty and clayey glaciolacustrine sediment with a capping of sand and gravel. Other kettled terraced spreads were laid down on bodies of stagnant ice during deglaciation. Moundy sandy deposits predominate around Lhanbryde (NJ 274 612), west of Elgin, and towards the coast around Binn Hill (NJ 305 656). The topography of the ground to the north and north east of Elgin is generally more subdued and is underlain by sand, silt and clay with minor amounts of gravel. These fine-grained sediments are commonly capped by or merge with gravelly Late-glacial raised beach deposits. The sandy glaciofluvial deposits around Elgin are worked in a pit at Woodside (NJ 237 632) and up to 15 m of fine-grained, bedded sand with minor amounts of pebble and cobble gravel was formerly worked in a pit at Duffushillock (NJ 216 596), in the moundy deposits south of Elgin.



Deltaic foresets dipping eastwards, capped by poorly stratified topset gravel at Lochinvar pit, near Elgin. P104109.

The flights of terraces flanking the lower reaches of the Spey and Lossie comprise thick, easily worked resources of sand and gravel, lying above the water table. The kettled upper terraces flanking the Spey are composed of glaciofluvial gravel, which merges into moundy ice-contact deposits around Garmouth. Some of the lower gravel terraces are flat-topped and probably of Late-glacial age. An extensive gravel terrace on the western flank of the River Lossie is worked at Lochinvar Pit (NJ 183 614) ([P104109](#)). The gravelly alluvial deposits of the river valleys are less attractive, as most of the resource lies below the water table and could only be worked by dredging. The postglacial raised beach gravels have been worked extensively for shingle, but contain little sand.



Composition of workable gravel deposits between Elgin and Aberdeen. P915335.

Apart from the sand and gravel which flanks the coast between the mouth of Tynet Burn and Buckie, the only other resources of sand and pebbly sand occur as small moundy spreads on the interfluvium to the east of the Spey. Exposures in the coastal area suggest that the former deposits are composed mainly of medium- to fine-grained sand. About 8 m of cross-bedded sand was recorded from a pit

immediately west-north-west of Mains of Tannochy (NJ 386 637) and a similar thickness of more pebbly sand was formerly exposed in a pit on the eastern bank of the Gollachie Burn (at NJ 406 647).

The average grading of the near-surface gravelly deposits flanking the River Spey between Fochabers and the coast, is illustrated in Aitken et al. (1979; fig.2). This shows that most of the resources consist of gravel and sandy gravel. The uniform composition of the clasts from these deposits is illustrated in [P915335](#). Tough clasts of psammite and quartzite predominate and the proportion of non-durable rock types is minimal. The grading and composition of aggregates from the Garmouth area are probably representative of most of the sands and gravels in the lower reaches of the Spey valley.

References

[Full reference list](#)

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