

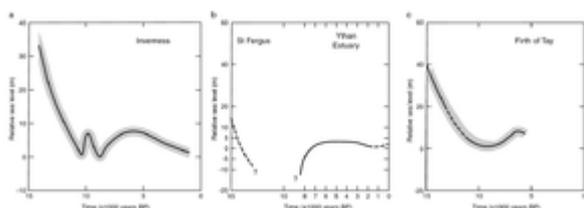
# Raised marine deposits, Quaternary, Cainozoic of north-east Scotland

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[Jump to navigation](#) [Jump to search](#)

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.

## Raised marine deposits



Inferred sea-level change over the past 15 000 years, based on height-age relationships of raised shorelines. P915295.

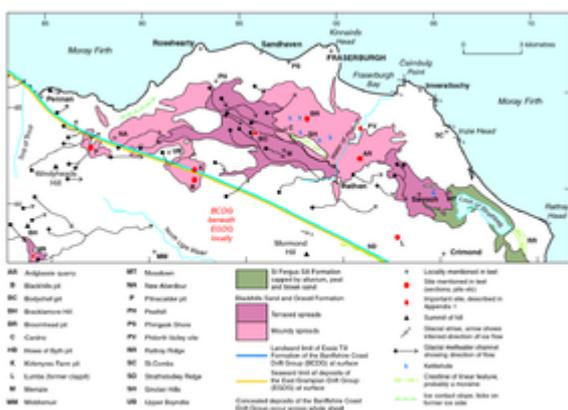
In addition to present-day coastal sediments, two distinct sets of raised marine deposits are present in the district. The sets were formed during periods of relatively high sea level, in Late-glacial times and in the mid-Holocene ([P915295](#)). Sea level was appreciably lower than it is today between these periods. Each set of deposits is capable of being divided lithologically into 'shoreface and beach deposits' (mainly shingle and sand) and quiet-water sedimentary facies formed in tidal-flat, brackish lagoon and estuarine environments (mainly fine-grained sand and silt). Only the raised glaciomarine deposits are described here; the raised beaches and associated deposits, rock platforms and other features of coastal erosion are described in [Geomorphological features](#).

## Late Devensian raised marine and glaciomarine deposits



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

Raised marine beds, mainly silty clay, are known between Elgin and Lossiemouth, from north of Peterhead, and possibly between Ellon and Stonehaven. In the Elgin area, the [Spynie Clay Formation](#) underlies much of the low-lying ground around Loch Spynie (NJ 237 667) (P915371). It occurs also below Lossiemouth Airfield where it is overlain by sand and gravel forming Late-glacial and Flandrian raised beaches. The maximum recorded thickness is 12.5 m (Peacock et al., 1968). North of the Spynie basin the formation attains a minimum level of 10 m above OD, and possibly reaches over 20 m OD, but on the south side of the basin the mapped level is only a little above present sea level, probably because the sea was partly excluded by stagnant ice from this area when sedimentation had begun elsewhere.



Glacial and glaciofluvial features and the distribution of glacial deposits on Sheet 97 Fraserburgh. P915374.

North of Peterhead, on Sheets 87E and 97, the dark grey silts, clays and fine-grained sands of the [St Fergus Silt Formation](#) extend up to about 16 m above OD. Most of the formation is concealed by lacustrine alluvium (peat and silt) or blown sand. It borders red diamicton, clay and sand of the Logie-Buchan Drift Group to the west, whereas seawards, it appears to be banked against, or to have been deformed into, an end moraine (Hall and Jarvis, 1989; Anderson in Scott, 1890; Glentworth and



# Navigation menu

## Personal tools

- Not logged in
- [Talk](#)
- [Contributions](#)
- [Log in](#)
- [Request account](#)

## Namespaces

- [Page](#)
- [Discussion](#)

## Variants

## Views

- [Read](#)
- [Edit](#)
- [View history](#)
- [PDF Export](#)

## More

## Search

## Navigation

- [Main page](#)
- [Recent changes](#)
- [Random page](#)
- [Help about MediaWiki](#)

## Tools

- [What links here](#)
- [Related changes](#)
- [Special pages](#)
- [Permanent link](#)
- [Page information](#)

- [Cite this page](#)
- [Browse properties](#)

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