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## Soils

An area's geological deposits provide the main source of inorganic ingredients for its soils. As the character of these soils is a major factor in determining the nature of the vegetation, there is thus a clear link between geodiversity and biodiversity. It has therefore been possible, in previous sections, to make a number of very broad general observations on the role of geology in influencing the area's biodiversity. However, soil formation (pedogenesis) also depends upon other factors such as climate, weathering processes, vegetation, input of organic matter, groundwater movement, complex chemical reactions and even human intervention including agricultural practices. Therefore, whereas over substantial parts of the county the character and properties of soils may closely reflect the underlying geology, in other places the link may be much less clear.

### Soils in County Durham

It has not been possible within the scope of this investigation of the county's geodiversity to explore in detail the nature and distribution of its soils. The map of soil distribution (Figure 26) and following brief description have been adapted from information in the 'County Durham Landscape Character Assessment'. More specialised information on soil character, properties and classification may be obtained from publications of the Soil Survey of England and Wales.

Soils over most of the county are heavy, poorly drained gleys derived from glacial boulder clays with pockets of lighter soils associated with glacial sands and gravels. Gley soils are characterized by a grey or grey and brown mottled (gleyed) horizon altered by reduction, or reduction and segregation, of iron as a result of periodic or permanent saturation by water in the presence of organic matter. Brown earths and alluvial soils occur along the main river valleys. Calcareous brown earths are found on limestone outcrops along the escarpment and coast.

In the west the combination of elevation, poor drainage and severe climate has led to the development of extensive blanket bog of deep peat giving way on the drier eastern moors to thinner peats, humic gleys and podzols. Smaller pockets of earthy peats are found in the flat carrs of the Tees plain.

Substantial areas of land in the coalfield have been disturbed by opencast coal mining or the reclamation of derelict land and have either restored natural soils or rudimentary soils derived from shales and clays.

### Selected references

Jarvis et al. 1984; Johnson and Dunham, 1963; Soil Survey of England and Wales, 1983.

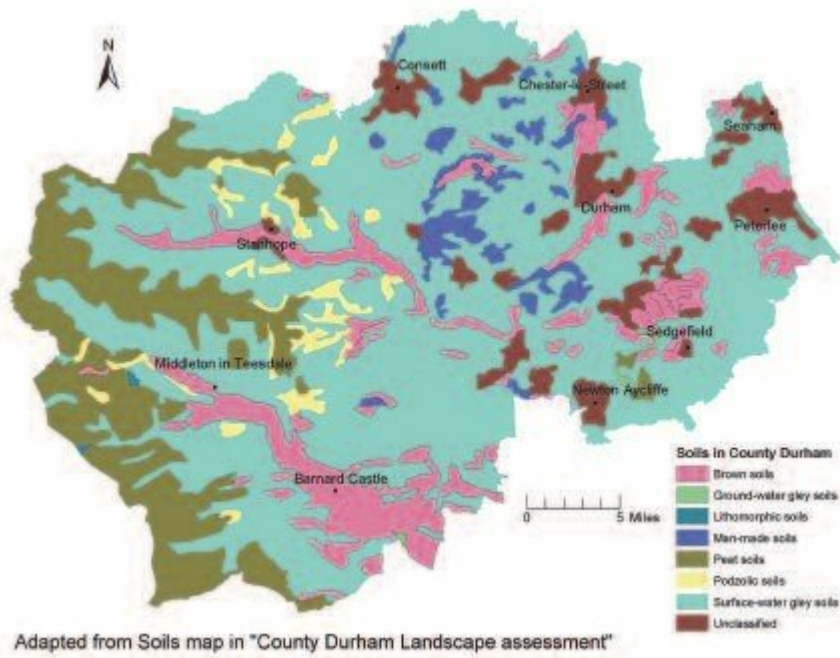
### Figures and photographs

(Figure 26) Distribution of soils in County Durham.

(Photo 68) Fossilised tree stump in Stanhope Churchyard, Weardale. Photographed in 1971, the site is now much overshadowed by trees. B Young, BGS, ©NERC, 2004.

(Photo 69) *Palaeoniscus* sp. A well preserved fish typical of the Marl Slate. BGS, ©NERC, 2004.

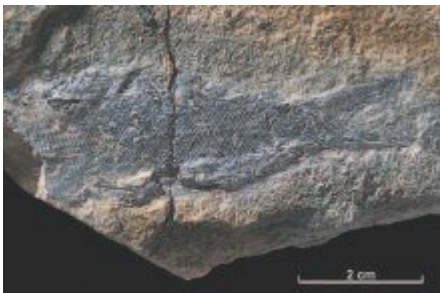
### [Full references](#)



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