

Soil Alert 10

brown podzolic soils

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Brown podzolic soils tend to have larger organic carbon contents than brown earths, as they occur in areas of high rainfall and relatively low summer temperatures. When under woodland there is often a well-developed O and/or Ah horizon, or a litter and thin organic surface (mor) layer usually thinner than the criterion for humose horizons. However, in most steep woodlands there is a significant inclusion of Humic brown podzolic soils, and often some Humic rankers (thin soils over rock) Skiddaw in the Manod Association, and Bangor and Preseli series in the Malvern and Moretonhampstead Associations.

There are good environmental arguments for minimising disturbance to these soils, as removal of trees, or ploughing of old pastures will release unacceptable amounts of CO₂ into the atmosphere. New conifer plantations should be avoided, as they are likely to cause extreme acidification and concomitant aluminium toxicity. The steep slopes of incised river and stream valleys can also be unstable, to the extent that removal of vegetation can cause serious erosion, or even dangerous land slippage.

Several Nature Reserves, ancient woodlands and some areas of temperate rainforest are found on these soils, and these should be respected for their biodiversity and their amenity values. Woodlands with good biodiversity can be developed in relatively short periods when natural regeneration of broadleaves is encouraged.

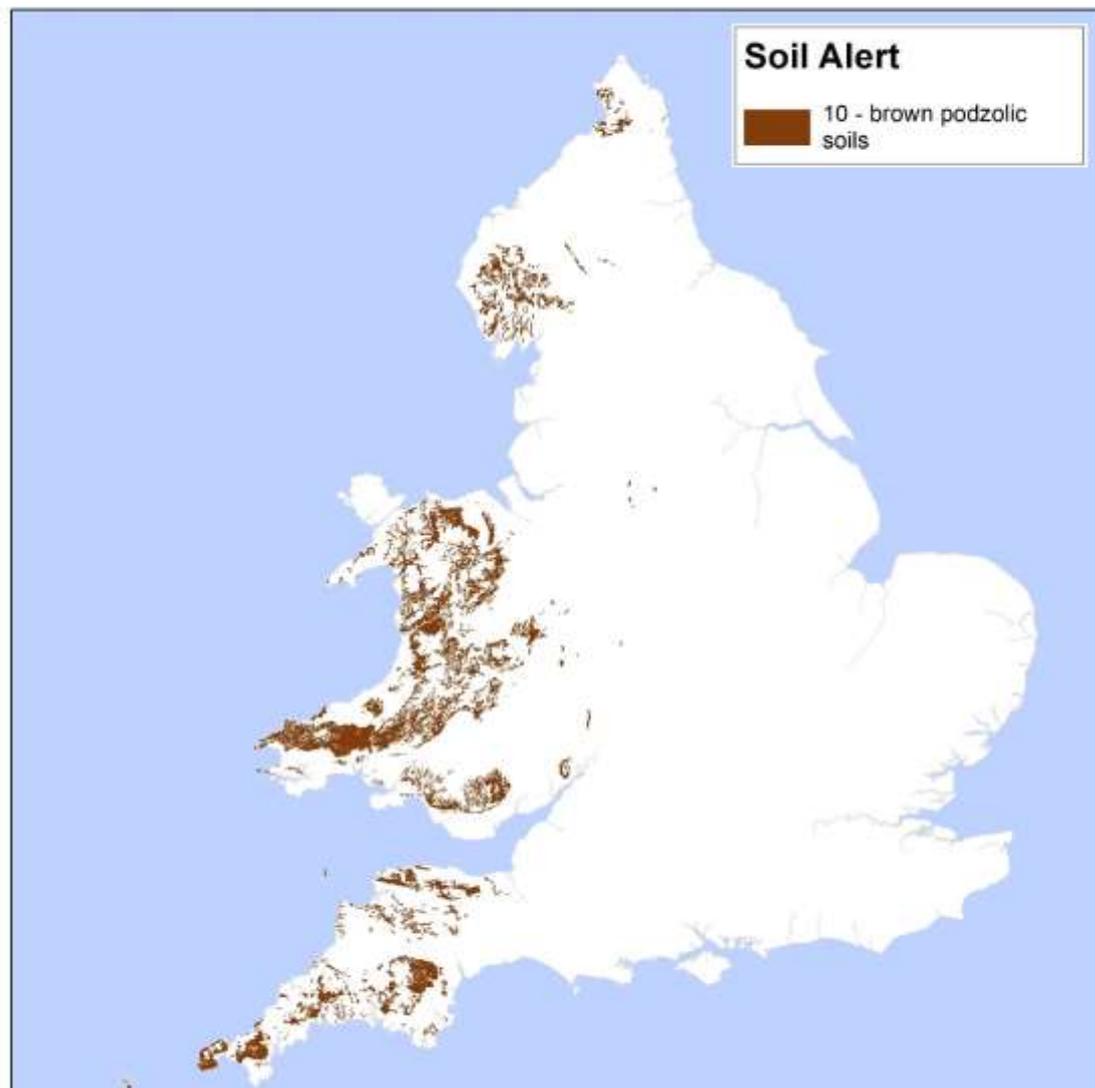
It is recommended that a full ecological and soil survey of sites on these soils be made before significant land-use changes are attempted. Special attention should be given to slope, and variability of soil depth to bedrock or scree, and the presence of rock outcrops and cliffs. The organic matter content of the topsoils and upper subsoil should be recorded, as well as the pH of all horizons.



A typical Welsh landscape for Manod soils

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On the National Soil Map of England and Wales, Brown podzolic soils are dominant or common in the following associations:

[611c Manod](#)

[612b Moor Gate](#)

[611e Withnell 2.](#)

[611b Moretonhampstead](#)

[611a Malvern](#)

[612a Parc](#)

[611d Withnell 1](#)

In western parts of the UK, especially on steep slopes, at altitudes below about 350 m, well drained soils with dark topsoils, no pale leached subsurface horizon and a subsoil rich in iron and humus are common under pasture, bracken, forest and woodland. These are *Typical brown podzolic soils* and *Humic brown podzolic soils*. On Palaeozoic sedimentary rocks, the Manod series is widespread, and found mainly in the Manod Association, which covers 5354 square kilometres in England and Wales. Malvern and Moretonhampstead Associations are similar, but developed on igneous substrates: together they cover about 1200 square kilometres. Withnell 1 and Withnell 2 Associations cover 730 square kilometres on coarser sedimentary sandstones. All of these associations have significant inclusions of *Humic brown podzolic soils* – Parc series on sedimentary rocks, and Moor Gate on igneous. Soil types with humose tops are most common under woodland and especially on steep slopes.

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Shallow Manod profile



Deep Manod profile

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Soil series affected by this alert:

6.11	MANOD (Mj)	6.11	MORETONHAMPSTEAD (Mr)	6.11	MELINE (mX)
6.11	MALVERN (MV)	6.11	NEFERN (Ne)	6.11	NEWTOWN (nN)
6.11	PENRITH (pT)	6.11	STONEBECK (SB)	6.11	WHITCOTT (Wct)
6.11	WITHNELL (Wm)	6.11	WINSKILL (WK)	6.11	BANC (Bnc)
6.11	BASCHURCH (Bb)	6.11	BATCH (bH)	6.11	BOWSCAR (BZ)
6.11	BROWNRIGG (Bl)	6.11	DAVIDSTOW (dO)	6.11	GARTH (Gq)
6.11	HOWARD (hU)	6.11	IVESHEAD (Iv)	6.11	LOXHORE (LR)
6.12	BOWDEN (Bw)	6.12	PARC (Pa)	6.12	DROGO (DR)
6.12	SILLOTH (Soh)	6.12	MOOR GATE (mQ)		