
3.4.7 Volcanic vent rocks

Outcrops of volcanic vent rocks comprise approximately 120 hectares, or 0.3% of the surface area of West Lothian. About 20 plugs and vents crop out as isolated subcircular areas in the northern part of the district (Figure 111). There are about 20 vents in West Lothian representing the subterranean plumbing of Lower Carboniferous volcanoes. These cylindrical to ellipsoidal shaped pipes are between 100 m and 1000 m across (greatest axis) and usually infilled with massive to poorly stratified, greenish-grey, coarse, basaltic volcanoclastic and sedimentary detritus (pyroclastic agglomerate) and are therefore vents. The largest vent is at The Binns and this is associated with two integral small plugs of olivine basalt. The next largest is Tar Hill and the most complex set is at Parkley Fisheries associated with two plugs of basalt and a late Carboniferous Quartz-dolerite dyke.

3.4.7.1 Soils, habitats and land use

The hard pyroclastic breccias and basalts of the volcanic vents are more resistant than the surrounding sedimentary rocks of the West Lothian Oil-shale Formation and mostly form hills or prominent features in the landscape, e.g. Tar Hill [NT 061 739], Carsie Hill [NT 0150 7457], Jock's Hill [NT 018 759], Peat Hill [NT 021 757], Pilgrim's Hill [NT 014 771] and Binns Hill [NT 053 786]. These hills are mostly till-free and the predominant soil type is the free-draining brown forest soil (Figure 6). Land use on these hills is mostly ley grassland and rough grazing.

3.4.7.2 Biodiversity

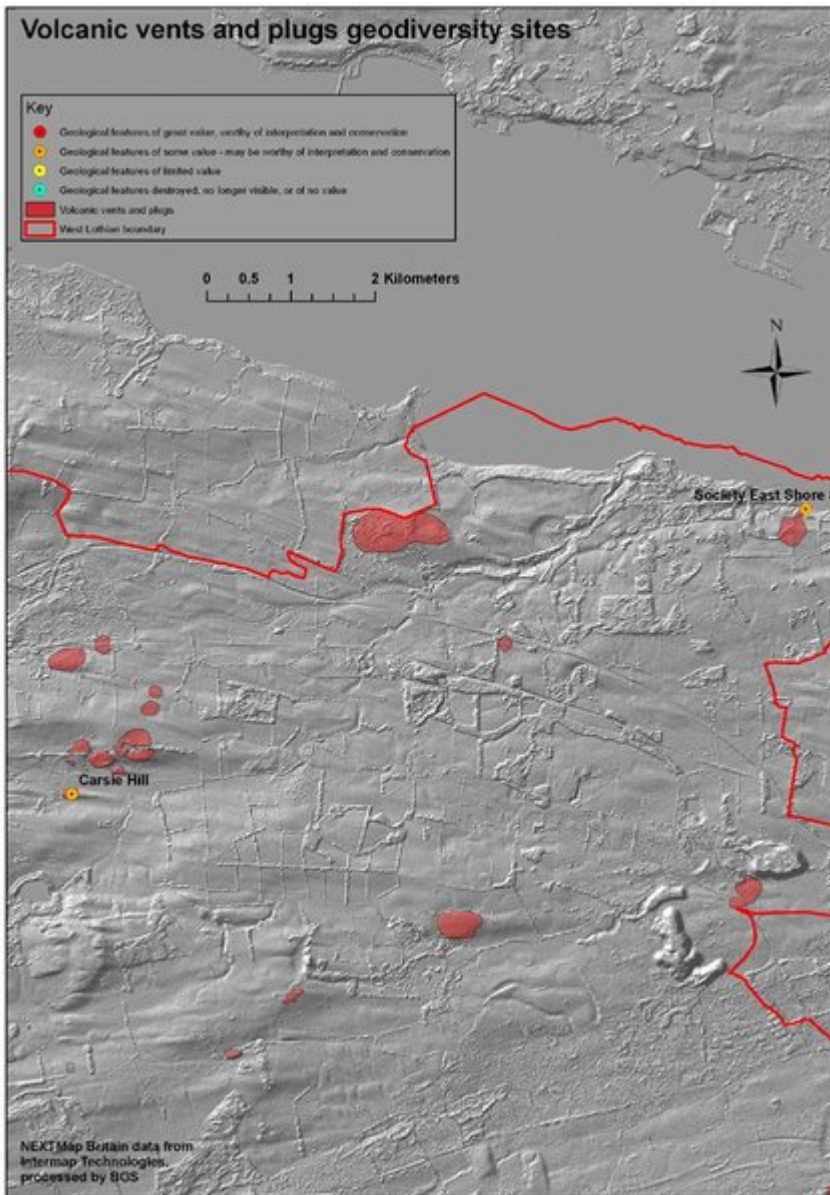
Conservation biodiversity interest is concentrated in (Figure 12): Listed Wildlife Sites on the Union Canal at Pilgrim's Hill [NT 014 771] and Niddry Castle [NT 095 743], and Hopetoun Estate [NT 102 789]; Ancient Woodland at Binns Hill [NT 055 786, NT 051 786] and East Shore Wood [NT 102 788].

3.4.7.3 West Lothian Geodiversity Sites

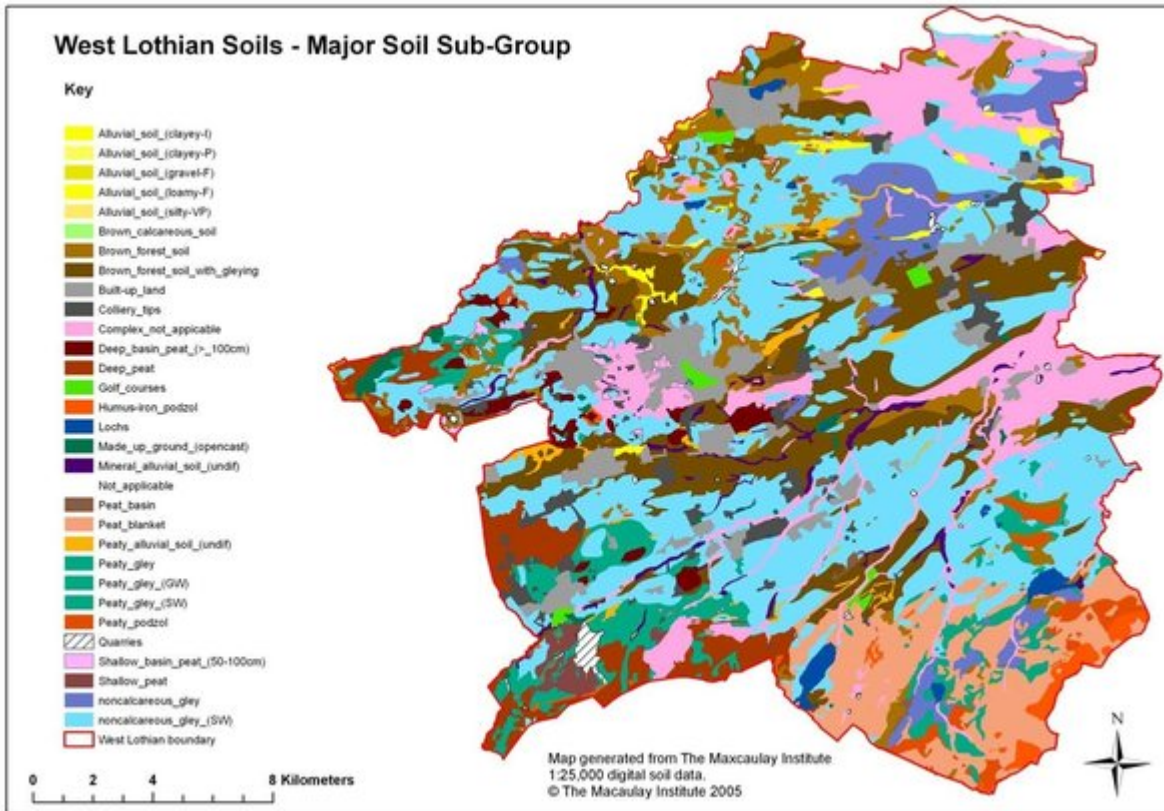
Given the very limited coverage of volcanic vents, the two sites described below are considered to adequately represent these rocks. Permission was refused to visit Tar Hill and Niddry Castle (see 4.3). Only two sites were visited — Carsie Hill and Society East Shore 8, but other potential geodiversity sites occur at Niddry Castle [NT 095 744], Tar Hill [NT 061 739], Pilgrim's Hill [NT 014 771] and Binn's Hill [NT 053 786].

[35 Carsie Hill](#)

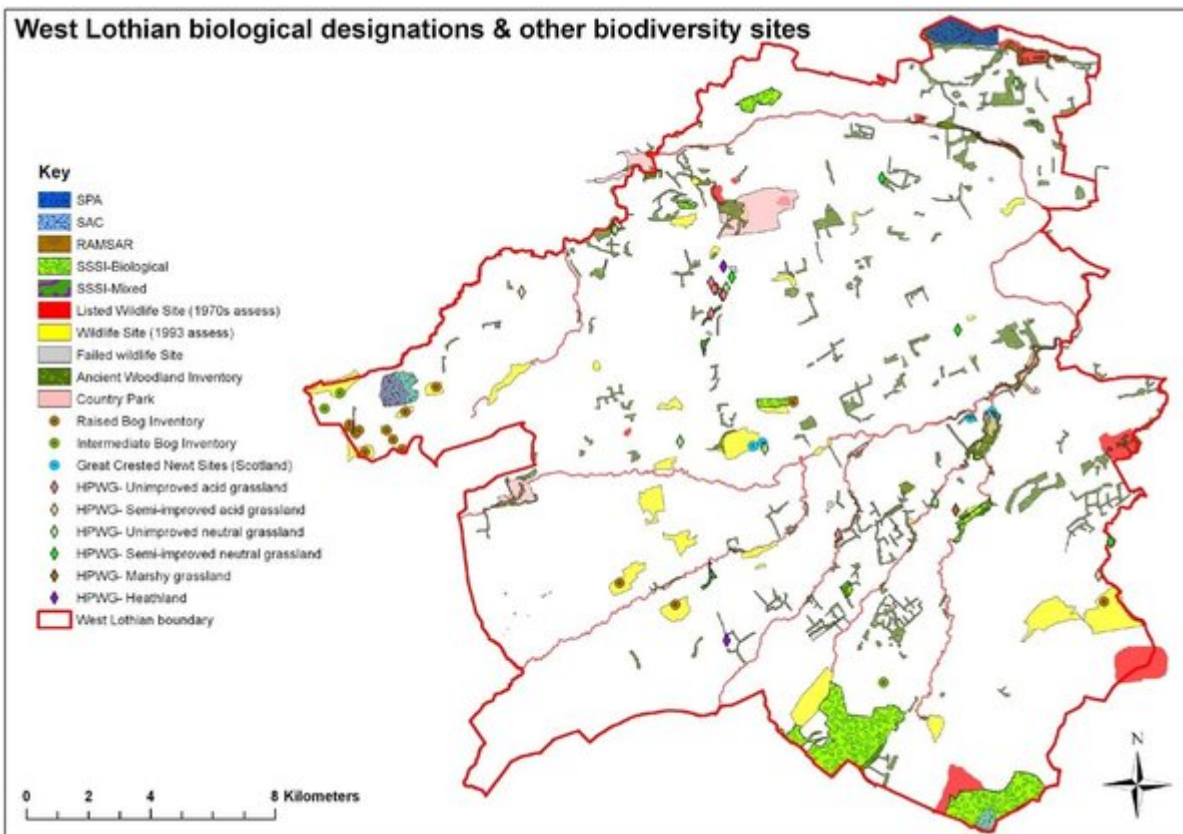
[14 Society East Shore](#)



(Figure 111) Volcanic vents and plugs geodiversity sites of West Lothian.



(Figure 6) Major Soil Sub-Groups of West Lothian. © The Macaulay Institute 2005.



(Figure 12) Biological designations and other biodiversity sites of West Lothian.