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## 3.4.8 Alkali-dolerite sills

Alkali-dolerite sills comprise approximately 1,268 hectares, or 2.9% of the surface area of West Lothian. They outcrop principally in the east of the district and mainly intrude Strathclyde Group rocks (Figure 2), (Figure 116). They intrude the Strathclyde Group, mainly stratigraphically below the Bathgate Group volcanic rocks of the Bathgate Hills. These dolerites are generally medium to fine-grained and of olivine-basalt composition. They are similar petrographically and compositionally to the lavas of the Bathgate Hills and could be coeval with them.

### 3.4.8.1 Soils, habitats and land use

The alkali-dolerite sills are variable in their topographic expression. Most are intruded into Strathclyde Group rocks and have little or no impact on landform and are till-covered, except the Auchnoon Sill which forms the till-free Auchinoon Hill. The sills intruding the Inverclyde Group between the Linhouse Water and Kirknewton also form positive landforms — Selms Top [NT 089 658], Hallcraigs [NT 106 667] and the Linhouse Water — Glasgow Viaduct 2 locality sill (Figure

122). These till-free soils have developed mainly brown forest, peaty gleys and peaty podzol soils with drainage varying from free to imperfect. As might be expected, the till covered sills develop mainly non-calcareous gleys and gleyed brown forest soils (Figure 6). The largest sill outcrops under the urban area of Livingston. On the other sills, land use is variable, but rough pasture predominates.

### 3.4.8.2 Biodiversity

Conservation biodiversity interest is concentrated in: the mixed biological and geological SSSIs at Firth of Forth (also Ramsar site and SPA) and Skolie Burn [NS 984 618]–[NS 986 628]; the biological SSSI at (Figure 12) Tailend Moss [NT 00 67] (see section 3.4.10.10); the Great Crested Newt (Scotland) site at Calder House [NT 071 674]. There are two Listed Wildlife Sites (Figure 12) — Hopetoun Estate [NT 088 789] and Kirknewton Estate [NT 113 663]. Wildlife Sites (Figure 12) occur at: Mains Burn [NT 033 735]; Faucheldean Bing [NT 084 742]; Tailend Moss [NT 009 678]. There are also around 20 areas of Ancient Woodland and five areas of Semi-Natural Woodland (Figure 12).

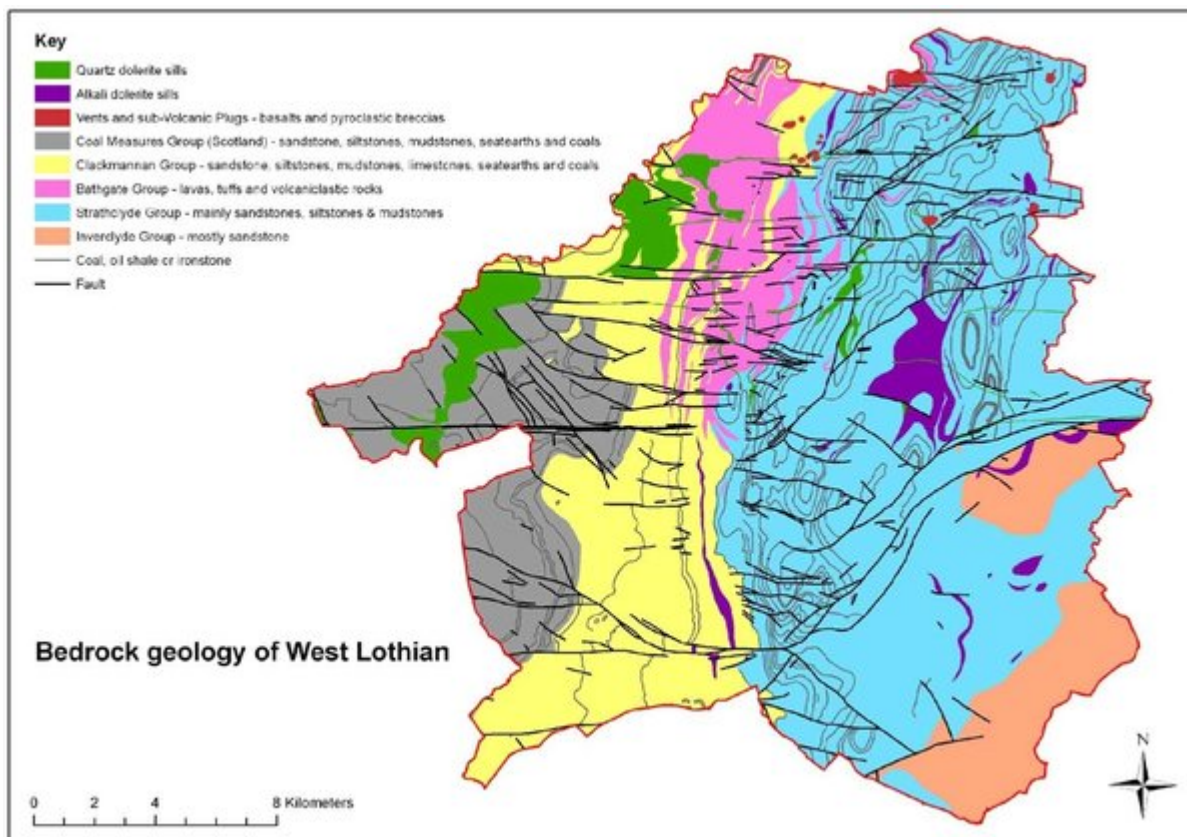
### 3.4.8.3 West Lothian Geodiversity Sites

Given the very limited coverage of alkali-dolerite sills, the three sites described below are considered to adequately represent these rocks.

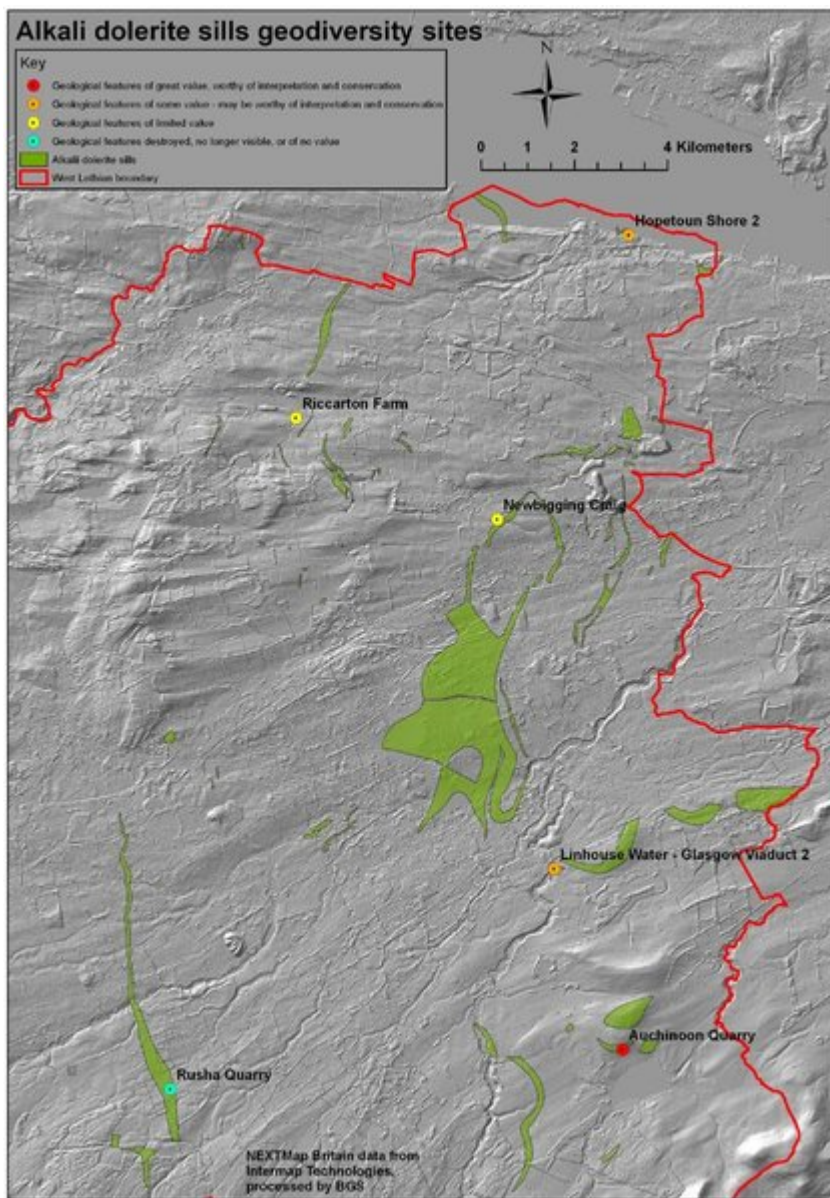
[36 Auchinoon Quarry](#)

[37 Linhouse Water - Glasgow Viaduct 2](#)

[17 Hopetoun Shore](#)

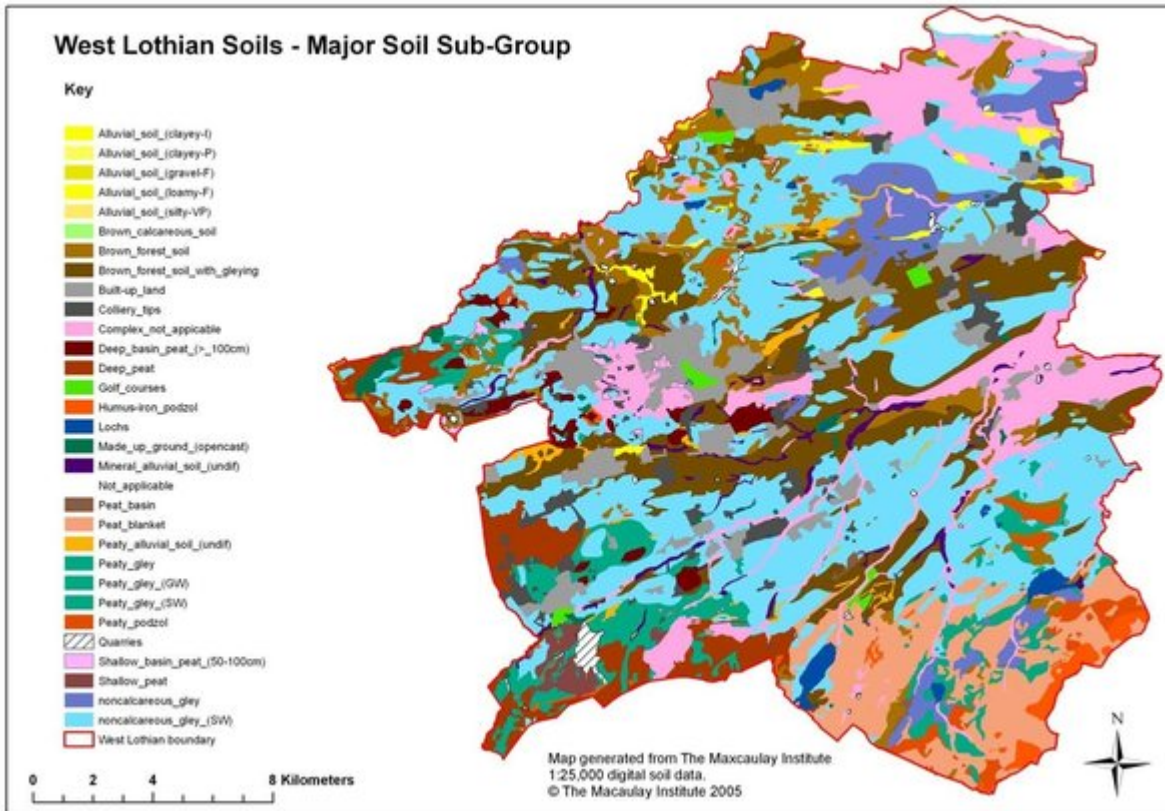


(Figure 2) Bedrock geology of West Lothian.

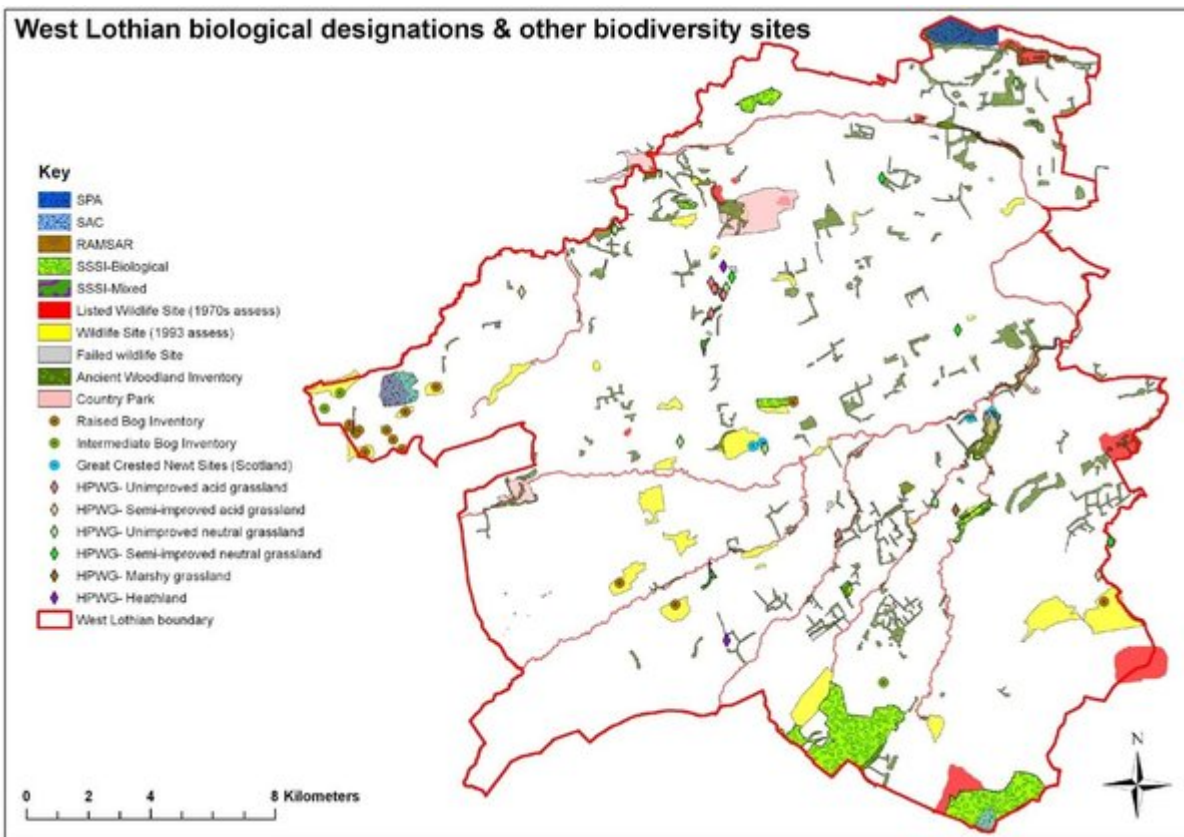


(Figure 116) Alkali-dolerite sills geodiversity sites of West Lothian.





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



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