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## EDC 19: Campsie Glen, Clachan of Campsie

**Grid reference:** [NS 61063 80000]

**Site type:** Natural section

**Site ownership:** Not known

**Current use:** Recreational land

**Field surveyor:** Sarah Arkley & Luis Albornoz-Parra

**Current geological designations:** None

**Date visited:** 10th March 2009

### Site map

(Figure 19) Campsie Glen Location Map

### Summary description

Large number of sedimentary, igneous and structural features including: Ballagan Formation (Inverclyde Group) mudstones and siltstones with thin interbeds and nodules of dolostone (cementstone); a number of narrow cross cutting dykes mostly of early Carboniferous age but also the Campsie Dyke of late Carboniferous to Permian age; at least three lava flows at the base of the Clyde Plateau Volcanic Formation. The lavas are underlain by red mudstones with a volcanic ash bed; faulting; and pot holes in the river bed at the knick point in the gorge

Comprehensive descriptions of the various geological features can be found both in the field guide of the Glasgow and Girvan area produced by the Glasgow Geological Society and in the pamphlet produced by the Strathclyde RIGS Group.

### EDC 19: Stratigraphy and rock types

**Age:** Lower Carboniferous Formation: Clyde Plateau Volcanic Formation

**Rock type:** Tuff and agglomerate

**Age:** Lower Carboniferous Formation: Clyde Plateau Volcanic Formation

**Rock type:** Microporphyritic basalt

**Age:** Lower Carboniferous Formation: Ballagan Formation

**Rock type:** Argillaceous rock, dolostone and sandstone

**Age:** Late Carboniferous Formation: Central Scotland Late Carboniferous Tholeiitic Dyke Swarm

**Rock type:** Olivine-microgabbro and olivine-basalt

### Assessment of site value

### Access and safety

## **Aspect/Description**

**Road access and parking** Good parking at Clachan of Campsie, space for about 20 cars, plus public bus service to Clachan of Campsie. Public footpath heads up the glen from here with information board at the edge of the village.

**Safety of access** Best exposures are in the river banks, care must be taken along the river. Footpaths exist up most of the glen although they are of variety of states.

**Safety of exposure** Higher up the glen, the steep sides of the valley are loose and unstable, and recent falls are evident. Warning signs have been erected to make people aware of the danger.

**Permission to visit** No permission sought

**Current condition** River exposures are kept clean by flowing water,

**Current conflicting activities** None

**Restricting conditions** Danger of rockfall in the upper parts of the glen

**Nature of exposure** River sections and exposures on valley sides

## **Culture, heritage & economic**

**Historic, archaeological & literary associations** Bleach pools from former industry. Rating: 3.

**Aesthetic landscape** Amazing steep-sided valley, mostly wooded. Rating: 5.

**History of earth sciences** In the late 1800's, this site was popular with many early geologists from the Geological Society of Glasgow. Rating: 2.

**Economic geology** None recorded. Rating: 0.

## **EDC 19: Geoscientific merit**

**EDC 19: Campsie Glen, Clachan of Campsie. Geoscientific merit.**

**Total Geoscientific merit score 59**

## **Current site value**

**Community** Rating: 10.

**Education** Rating: 6.

## **Fragility and potential use of the site**

**Fragility** Geohazard, Erosion

**Potential use** Research, Higher/Further Education, School, On-site Interpretation, Geotrail, Multidisciplinary

## **Geodiversity value**

Excellent site, the main value of which lies in the wide variety of geological features displayed up the Glen. Access to the site and lower parts of the glen is very good and already popular with visitors and geologists. There are ample

opportunities to enhance existing information with some geology. Rating: 0.

## Photographs

(Photo 100) Close-up of the map / information board located at the bottom of Campsie Glen. The glen is regarded as a classical geological locality; it is one of only 2 sites in East Dunbartonshire published in the Glasgow Geological Society Excursion Guide for the area, and was undoubtedly visited by geologists in the early 1900's. The board highlights the natural and cultural history of the area, but unfortunately there is no geological information about how the rocks have influenced the shape of the landscape, the different geological features visible in the Glen, or how the existence of certain rock types were fundamental for local industries. The formation of the Glen is related to the retreat of glaciers back towards the Highlands, when vast amounts of meltwater caused massive erosion and the formation of gorges such as that seen today at Campsie Glen.

(Photo 101) View looking NE across the remains of a rectangular 'bleach pool', associated with the former textile industry which developed as a result of the alum works near Lennoxton. The industry existed in this area due to the presence of alum shale as part of the local geology.

(Photo 102) The lower part of the Campsie Glen is underlain by the Ballagan beds, composed of dark coloured mudstones alternating with beds of cementstone (muddy dolomitic limestone). Here the beds are cut by a pale-coloured, carbonated igneous dyke, the line of which is displaced by a fault, tilting the Ballagan beds to a steep angle. Ten metres upstream, away from the fault, the Ballagan beds can be seen in both river banks at a low angle. Looking W.

(Photo 103) A prominent waterfall in the burn is caused by the presence of doleritic dyke which forms a resistant barrier compared to the more easily eroded sedimentary rocks downstream belonging to the Ballagan Formation. At low water the structure of the dyke reveals a complex story of multiple intrusions. Looking W.

(Photo 104) At the confluence with the Aldessan Burn the upper part of the Ballagan Formation can be examined; the pale-coloured cemenstones can clearly be seen alternating with the darker mudstone layers. Approximately 20m higher up the sequence these sedimentary rocks are overlain by lava flows belonging to the Clyde Plateau Volcanic Formation. Looking WNW.

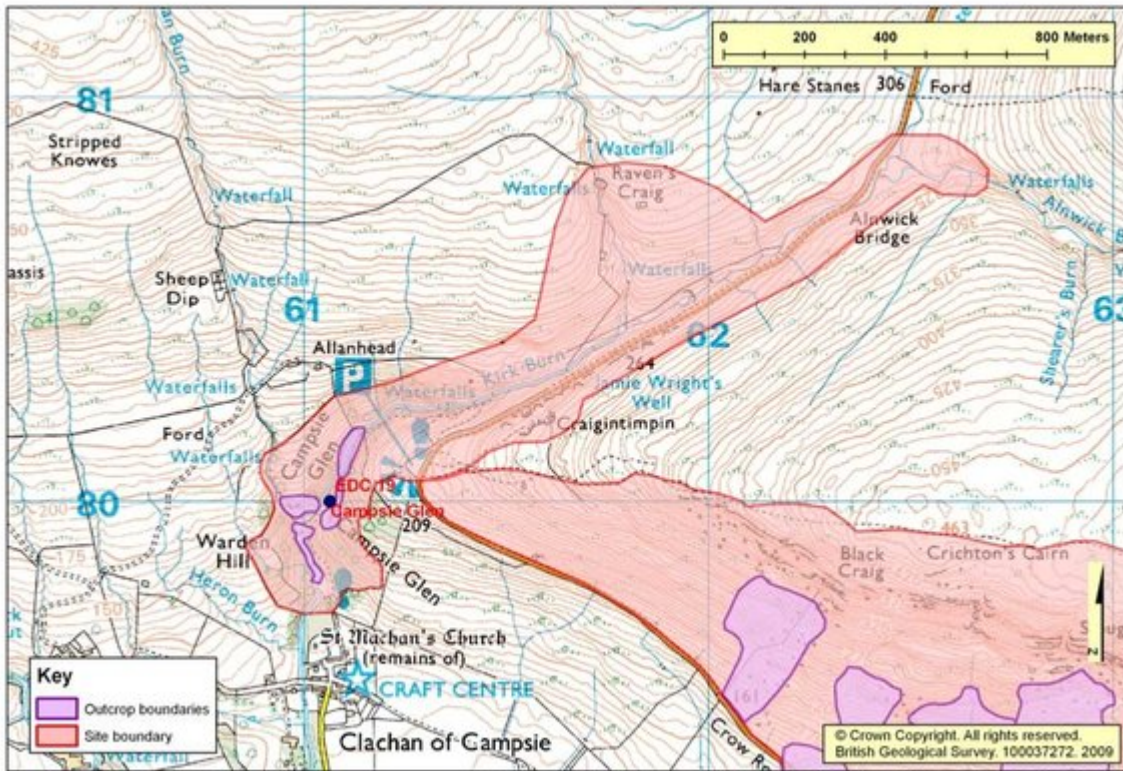
(Photo 105) Looking through the trees, towards the skyline, a larger waterfall can be made out. This has formed where the Aldessan Burn flows over the lowermost lava flows of the Clyde Plateau Volcanic Formation. Looking NW.

(Photo 106) A sign warning walkers that the upper part of the Campsie Glen is susceptible to rockfalls. Continuing weathering and erosion of the steep unstable slopes makes the glen a risk to those who venture beyond this point. Looking NE.

(Photo 107) View looking E from the confluence of the Aldessan Burn. The lower two-thirds of the valley side is composed of sedimentary rocks belonging to the Ballagan Formation. The craggy upper part of the slope displays the lowermost 3 or 4 lava flows of the Clyde Plateau Volcanic Formation. The flows, each several metres thick, form a series of rocky ribs along the valley sides. The flows are often separated by a grassy ledge where softer material has been eroded away.

(Photo 108) Close-up of a series of elongate hollow 'vesicles' within a basaltic lava flow of the Clyde Plateau Volcanic Formation. When magma is erupted the molten rock often contains gas bubbles which, on contact with the cold air, become 'frozen' in the rock before they can escape. These are known as vesicles.

## [Bibliography](#)



(Figure 19) Campsie Glen location map.

GeoScientific Merit	Rarity	Quality	Literature/ Collections	1st
Litho Stratigraphy	5	6	8	<input checked="" type="checkbox"/>
Sedimentology	5	6	2	<input type="checkbox"/>
Igneous/Mineral/ Metamorphic Geology	5	5	2	<input type="checkbox"/>
Structural Geology	5	4	2	<input type="checkbox"/>
Palaeontology	0	0	0	<input type="checkbox"/>
Geomorphology	2	2	0	<input type="checkbox"/>

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*(Photo 102) The lower part of the Campsie Glen is underlain by the Ballagan beds, composed of dark coloured mudstones alternating with beds of cementstone (muddy dolomitic limestone). Here the beds are cut by a pale-coloured, carbonated igneous dyke, the line of which is displaced by a fault, tilting the Ballagan beds to a steep angle. Ten metres upstream, away from the fault, the Ballagan beds can be seen in both river banks at a low angle. Looking W.*



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