
EDC 20: Cowies Glen

Figure 20: Cowies Glen Location Map

Summary description

Stream sections up the Waltry Burn expose a variety of sedimentary rock types, features and tectonic structures.

The burn cuts through strata belong to the Lower Limestone Formation and the Upper Limestone Formation.

Exposures of limestone, coal, mudstone and sandstone can all be observed. Natural coal exposures in Central Scotland are rare due to their economic value as a raw material. The limestone beds often display scattered crinoidal fragments and some sandstone units show good examples of fossilised current ripples. A small sandstone quarry exists part way up the site, presumably for local use. An excellent section through a fault is exposed part way up the site, with different rock units either side and ochre stained waters draining from the plane of the fault.

Small exposures of glacial till (Wilderness Till Formation) are present in the banks of the burn in the lower part of the site, characteristically displaying scattered boulders within a fine-grained, over-consolidated matrix.

Geomorphological features have been formed by the river, particularly good examples include the potholes part way up the site

Access at the top of the site is barred by 'keep out' signs.

EDC 20: Stratigraphy and rock types

Age: Lower Carboniferous Formation: Lower Limestone Formation

Rock type: Sedimentary Rock Cycles of the Clackmannan Group Type

Age: Upper Carboniferous Formation: Upper Limestone Formation

Rock type: Sedimentary Rock Cycles of the Clackmannan Group Type

Assessment of site value

Access and safety

Aspect/Description

Road access and parking Parking for one car is possible by the covered reservoir to the west of the site.

Safety of access The Glen is largely wooded and access up Waltry Burn to view exposures requires frequent crossing of the burn, wellingtons recommended. Accessible with care. Access up Burniebrae Burn, which joins Waltry Burn SE of Shields Cottage, is not welcome (warning signs).

Safety of exposure Care should be taken when crossing the burn with slippery rocks in the water and some sections are quite high and may contain loose blocks above head height.

Permission to visit No permission sought

Current condition Most burn sections kept clean by flowing water

Current conflicting activities None

Restricting conditions None

Nature of exposure Natural exposures in the burn and valley sides

Culture, heritage & economic

Historic, archaeological & literary associations None known. Rating: 0.

Aesthetic landscape Wooded valley. Rating: 2.

History of earth sciences None known. Rating: 0.

Economic geology Former small sandstone quarry, coal seam observed in stream section. Rating: 2.

EDC 20: Geoscientific merit

EDC 20: Cowies Glen, Milton of Campsie. Geoscientific merit.

Total Geoscientific merit score 52

Current site value

Community. Rating: 2.

Education. Rating: 5.

Fragility and potential use of the site

Fragility Erosion

Potential use Higher/Further Education, School, Multidisciplinary

Geodiversity value

The main value of this site is the variety of sedimentary rocks and structures visible up the glen. The exposures of Upper Limestone Formation are particularly useful in representing this part of the Carboniferous succession. Some of these geological features are of a high quality or rarely exposed in East Dunbartonshire. However the site's value for geoconservation is currently lessened by unfriendly access. Rating: 6

Photographs

(Photo 109) An example of the sedimentary sequence seen in Cowies Glen, through the Lower Limestone Formation. Looking SE.

(Photo 110) Close-up of fossilised ripples found on the upper surface of a layer of sandstone, exposed in the Waltry Burn.

(Photo 111) A fault exposed in the western bank of the burn. The line of the fault, which cuts through steeply dipping strata, can be seen running from the top right to the bottom left of the photograph. Movement must have occurred along

this fracture in the rocks to bring together the black mudstones visible 'beneath' the fault and the sandstones 'overlying' the fault. The iron-rich staining seeping out of the fault zone shows that fluid movement preferentially occurs through fractures in the rocks. Looking SW.

(Photo 112) A sub-horizontal bed of sandy limestone in the Lower Limestone Formation forms a small waterfall near the confluence of Burniebrae Burn and Spouthead Burn. Looking NE.

(Photo 113) An outcrop of coal from the Upper Limestone Formation, exposed in the bank of Cowies Glen. Coal was an important resource in the past and few places still exist where it can be found naturally occurring at the surface. Looking NW.

(Photo 114) Close-up of a limestone bed containing small light-coloured fossil crinoid fragments. Black pen top for scale.

(Photo 115) Warning signs in the upper part of Cowies Glen. Looking NE.

(Photo 116) Warning signs in the upper part of Cowies Glen. Looking NE.

(Photo 117) Exposure of glacial till in the bank of the Waltry Burn, typically fine-grained containing a scattering of pebbles, cobbles and boulders. This material has been transported, deposited and over- ridden by moving glacial ice. Despite covering large areas of East Dunbartonshire there are few places where a good section through till can be observed. Looking E.

(Photo 118) Where the burn cuts through more resistant sandstone beds, the water has cut a narrow channel and a series of rapids have formed. A 'pot-hole' has also developed, carved out by the scouring and grinding effect of trapped pebbles as they are rotated in a swirling eddy of water. Looking ENE.

[Bibliography](#)

GeoScientific Merit	Rarity	Quality	Literature/ Collections	1st
Litho Stratigraphy	5	5	2	<input type="checkbox"/>
Sedimentology	5	5	2	<input type="checkbox"/>
Igneous/Mineral/ Metamorphic Geology	0	0	0	<input type="checkbox"/>
Structural Geology	5	5	2	<input type="checkbox"/>
Palaeontology	4	4	2	<input type="checkbox"/>
Geomorphology	3	3	0	<input type="checkbox"/>

EDC 20: Cowies Glen, Milton of Campsie. Geoscientific merit.



(Photo 109) An example of the sedimentary sequence seen in Cowies Glen, through the Lower Limestone Formation. Looking SE.



(Photo 110) Close-up of fossilised ripples found on the upper surface of a layer of sandstone, exposed in the Waltry Burn.



(Photo 111) A fault exposed in the western bank of the burn. The line of the fault, which cuts through steeply dipping strata, can be seen running from the top right to the bottom left of the photograph. Movement must have occurred along this fracture in the rocks to bring together the black mudstones visible 'beneath' the fault and the sandstones 'overlying' the fault. The iron-rich staining seeping out of the fault zone shows that fluid movement preferentially occurs through fractures in the rocks. Looking SW.



(Photo 112) A sub-horizontal bed of sandy limestone in the Lower Limestone Formation forms a small waterfall near the confluence of Burniebrae Burn and Spouthead Burn. Looking NE.



(Photo 113) An outcrop of coal from the Upper Limestone Formation, exposed in the bank of Cowies Glen. Coal was an important resource in the past and few places still exist where it can be found naturally occurring at the surface. Looking NW.



(Photo 114) Close-up of a limestone bed containing small light-coloured fossil crinoid fragments. Black pen top for scale.



(Photo 115) Warning signs in the upper part of Cowies Glen. Looking NE.



(Photo 116) Warning signs in the upper part of Cowies Glen. Looking NE.



(Photo 117) Exposure of glacial till in the bank of the Waltry Burn, typically fine-grained containing a scattering of pebbles, cobbles and boulders. This material has been transported, deposited and over- ridden by moving glacial ice. Despite covering large areas of East Dunbartonshire there are few places where a good section through till can be observed. Looking E.



(Photo 118) Where the burn cuts through more resistant sandstone beds, the water has cut a narrow channel and a series of rapids have formed. A 'pot-hole' has also developed, carved out by the scouring and grinding effect of trapped pebbles as they are rotated in a swirling eddy of water. Looking ENE.