
EDC 7: River Kelvin Meanders, Bearsden

Grid reference: [NS 56262 70469]

Site type: Natural landform

Site ownership: Not known

Current use: Recreational land

Field surveyor: Sarah Arkley & Luis Albornoz-Parra

Current geological designations: None

Date visited: 6th March 2009

Site map

(Figure 7) River Kelvin Meanders Location Map

Summary description

Typical river features seen along a meandering stretch of the River Kelvin on the edge of Bearsden.

This site is one of the best places to observe lower course river features in East Dunbartonshire. The meanders display good examples of river-cliffs and point-bars. The erosive banks found on the outside of the meander are up to 2–2.5 m high, cutting into bedrock in places. The depositional point-bar, made up of soft fine-grained sediment, forms on the inside of the meander.

Towards the northeastern corner of the site a mid-channel bar can also be seen. Located on a meander, the bar creates an eddy flow, where water between the bar and the river bank flows upstream.

EDC 7: Stratigraphy and rock types

Age: Pleistocene Formation: Wilderness Till Formation

Rock type: Glacial deposits: diamicton

Age: Holocene Formation: Kelvin Formation

Rock type: Alluvium deposits: clay, silt, sand and gravel

Assessment of site value

Access and safety

Aspect/Description

Road access and parking Parking is possible north of the meanders at Killermont Golf Club (ask for permission) access to views along the river is possible along the edge of the golf course. The 'Kelvin Walkway' runs along part of the meandering rivers course south of the river

Safety of access Generally open woodland or shrub along the river banks, easy walking

Safety of exposure Be careful of steep or overhanging river banks

Permission to visit Killermont Golf Club for the area north of the river

Current condition Good

Current conflicting activities Stabilisation of the river banks would obscure any natural sections or landforms

Restricting conditions None

Nature of exposure Natural landforms

Culture, heritage & economic

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

Aesthetic landscape Unspoilt river course, partly wooded at the edge of Glasgow City. Rating: 3.

History of earth sciences None known. Rating: 0.

Economic geology None recorded. Rating: 0.

EDC 7: Geoscientific merit

EDC 7: River Kelvin Meanders, Bearsden. Geoscientific merit.

Total Geoscientific merit score 11

Current site value

Community Popular golf course to the north of the river and public footpath south of the river means people are frequently walking along the site. Rating 10.

Education Reasonable examples of meanders, displaying classic river cliffs and point bars. 'Cut-off' meanders can be seen further upstream in the River Kelvin between Torrance and Kirkintilloch (Torrance Meanders, EDC 36). Rating: 4.

Fragility and potential use of the site

Fragility Erosion

Poential use School, Multidisciplinary

Geodiversity value

This site displays characteristic erosional and depositional river features found in the lower course of a mature river. Although common across Central Scotland, examples of good sized meanders are relatively rare in East Dunbartonshire. The main value of the site is to use these fluvial deposits and landforms which are actively forming today and representative of river landforms forming across Scotland to help us understand the structures and sediments observed in fossil river deposits from the Carboniferous which underlie extensive areas of the Midland Valley. As Charles Lyell summarised in the 1830's "The present is the key to the past". In the absence of locally active glaciers or volcanoes, rivers are a good example to illustrate the important geological principle of uniformitarianism, explaining that the same natural processes that operate now, have always operated in the past, and at the same rates. Its geodiversity value is

enhanced on account of its relative rarity in East Dunbartonshire. Rating: 3.

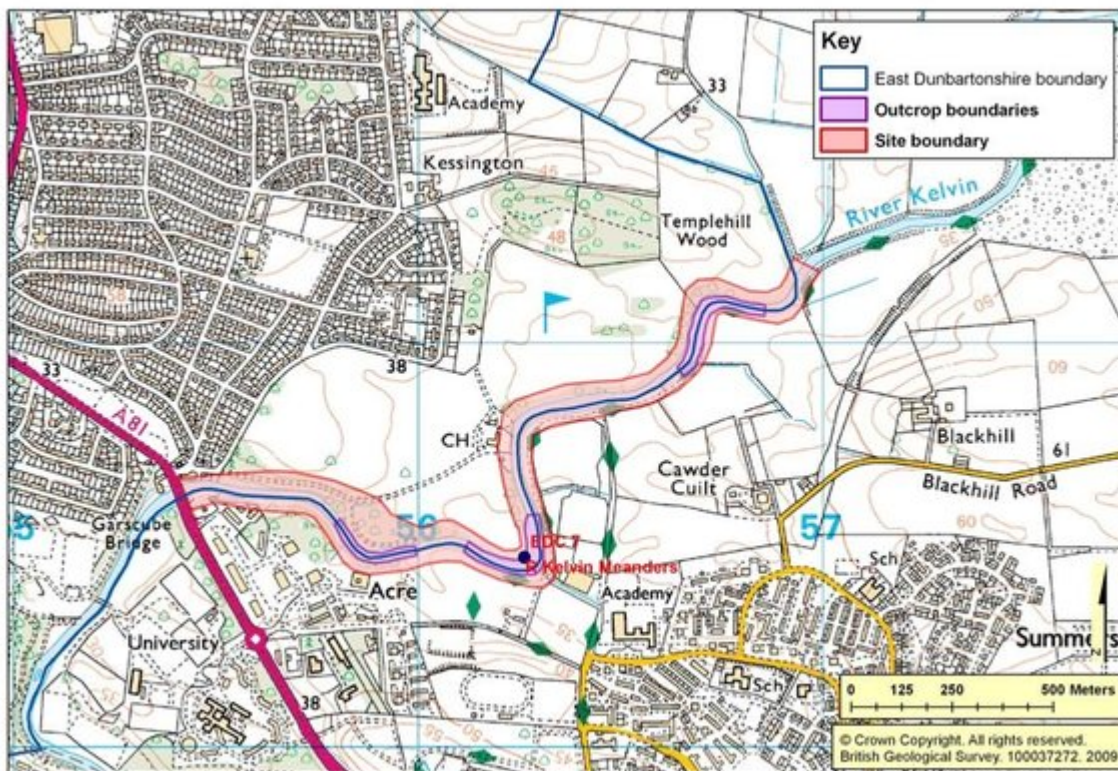
Photographs

(Photo 31) Looking SW across a meander in the River Kelvin. The foreground contains fine-grained sediment deposited in the slow-moving inside curve of the meander. In contrast, the outside of the meander is subject to erosion and the far bank in the photograph displays the resulting small river-cliff.

(Photo 32) A channel bar has formed in a prominent meander of the River Kelvin, creating an eddy in the waterflow (the water in the small channel to the left is flowing upstream). Looking E.

(Photo 33) Looking SW across a meander in the River Kelvin.

Bibliography



(Figure 7) River Kelvin Meanders location map.

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

EDC 7: River Kelvin Meanders, Bearsden. Geoscientific merit.



(Photo 31) Looking SW across a meander in the River Kelvin. The foreground contains fine-grained sediment deposited in the slow-moving inside curve of the meander. In contrast, the outside of the meander is subject to erosion and the far bank in the photograph displays the resulting small river-cliff.



(Photo 32) A channel bar has formed in a prominent meander of the River Kelvin, creating an eddy in the waterflow (the water in the small channel to the left is flowing upstream). Looking E.



(Photo 33) Looking SW across a meander in the River Kelvin.