# East Dunbartonshire geodiversity audit: 1 Introduction

The British Geological Survey (BGS) was commissioned by East Dunbartonshire Council (EDC) to carry out a review of sites of geological and geomorphological significance within the local authority area. The study has taken the form of a geodiversity audit to assist in future planning, development and conservation issues.

This work was undertaken during Spring 2009 and combined a desk-top review of published literature and records with new information collected from field visits carried out during March and April 2009. This report describes, illustrates and scores 36 sites in East Dunbartonshire of which 34 are recommended as Local Geodiversity Sites and together represent the geological diversity of the area.

In addition to this report the study has produced a GIS database containing key spatial and attribute information relating to each site, which has been provided to EDC.

#### 1.1 Background

In its recent Local Plan, EDC identified a number of strategic aims for all services. One of these is enhancement of the quality of life and protection of the local environment. More specifically, the Council is dedicated to furthering the cause of geodiversity by protecting landscape features, in particular those geological features that are designated as Local Geodiversity Sites (formerly termed Regionally Important Geological and Geomorphological Sites or RIGS) and those protected in East Dunbartonshire's Greenspace Strategy.

Nationally designated sites such as SSSIs protect only a limited part of the area's geodiversity. With the aid of Scottish Natural Heritage (SNH), EDC wish to evaluate their Local Nature Conservation Sites (LNCS). These are non-statutory sites selected for their local geodiversity (LGS) or biodiversity and ecological importance (LBS or formerly SINCs). EDC also wish to explore the potential for enhancing the quality and quantity of their geological sites, particularly those of educational value. A survey of these sites will assist EDC with writing Local Plan 2 and form the basis of a Local Geodiversity Action Plan (LGAP).

# 1.2 Aims and objectives

The principal aim of the study is to identify a network of key sites across East Dunbartonshire, supported by formal assessment, which represent the diverse geology and geomorphology of the area.

To achieve these aims, the objectives of the study are as follows:

- 1. Undertake a review of existing sites of geological/geomorphological significance.
- 2. Identify additional sites to ensure as full a representation as practical of the geology and geomorphology in the area with a good geographical spread.
- 3. Recommend site boundaries and where appropriate make suggestions for the future management of the site, following assessment of the current site condition.
- 4. Establish the geodiversity value for each site, based on a series of criteria including scientific, educational, cultural and community merits.
- 5. Use assessment criteria suitable for repeatable, consistent valuation of the sites.
- 6. Provide information that will enable the integration of geology with the area's landscape, biodiversity, cultural and economic heritage.
- 7. Identify key geological sites which may be appropriate for conservation and/or enhancement with respect to education and public enjoyment.

#### 1.3 Methodology

Three key stages:

- 1. Inception and desktop study (review of published literature and BGS archive records; identification of potential sites from various sources). See (Table 2) for list of potential sites.
- 2. Field-based study (assessment of potential sites to identify key representative localities; documentation/recording of principal features of geological/geomorphological significance).
- 3. Analysis, recommendations and reporting.

### 1.4 Structure of the report

Following the background and introduction to the study in chapter 1, chapter 2 describes the geology present in East Dunbartonshire, summarising the underlying bedrock (solid) geology and the overlying Quaternary (superficial) deposits. This information is based on the published geological maps of the area; BGS map sheets 30E (Glasgow) and 31W (Airdrie). Chapter 3 describes how the local geodiversity sites were selected and evaluated, the methodology for collection of the field data, and information on the scoring system used.

Chapter 4 provides detailed site assessments for each of the 35 individual sites visited, and forms the main part of the report. The information is presented as a set of pro-forma sheets containing information including:

- Location and general information
- Location map
- Summary description
- Access and safety
- Culture, heritage and economic
- Geoscientific merit
- Current site value
- Geodiversity value

Chapter 5 summarises information about the sites in two tables: (Table 7) brings together the scores given for Geoscientific merit, Community Value, Education Value and Cultural/Heritage/ Economic Value for each site. Added together these give a total score upon which an ultimate Geodiversity Value is based. (Table 8) highlights which geological units and features are visible at each site.

The appendices include a representative collection of photographs with descriptive captions illustrating and explaining the main geological features present at each site (Appendix 1). Other appendices contain typical descriptions of the different geological rock units which underlie East Dunbartonshire (Appendix 2); the SIGMA (System for Integrated Geoscience MApping) Mobile system used to digitally record data in the field (Appendix 3).

# 1.5 What is geodiversity?

Geodiversity has many definitions, but essentially describes the variety of rocks, minerals and fossils, landforms and landscapes, active geological processes and soils and subsoils (Quaternary deposits) of an area. It links people, places, rocks, soils, landforms, landscape and ecosystems, and the past through the present to the future.

All these elements interlink and together determine not only the character of our natural environment and where the range of local wildlife habitats have formed, but have influenced, for example, where mineral workings have taken place and the history of settlement in the area. Geology, as the foundations of our landscape, influences and links much of an area's local 'character'.

#### 1.6 Why conserve geological features

Considering the impact of geology on our local landscapes and heritage, few geological and landscape features in Scotland have any protection other than those designated as SSSIs. Geodiversity is an important environmental asset but is one of the least recognised and appreciated.

The geodiversity of an area is vulnerable to a wide range of threats, quarries can be infilled, natural overgrowing by vegetation can completely obscure an exposure, features within an urban environment may be built over.

The general public, Local Authorities, industries and schools have for many years been made aware of the importance of conserving archaeological and wildlife sites for future generations; it equally important that geodiversity sites are understood, protected and explained to others.

#### **Bibliography**

Table 2						Table 2 (continued)									Table 2 (continued)										
	100	Easting	Burthing	Source of Information	Printly to visit	Notes	Geodesraty Site No.	-	Siles		Basting	auting	Seures of Information	Printly In state	Notes	Geoderaty Site No.	-	Biles .		Easting	-	Source of Industrial	Printip	Rates	Siz So.
Project	10		****	805 mapmenur		Myst merk Syther meetigeton			Master Caste Mote & Baley	10	6429	1940	805 Representation		Maple mark Scritter metrologistics			East and of Lamondoan	45	-	276	Deathright NGD		Matched with BOIL	
Chaigangount Guarry area	50	\$250	7495	805 naphenor	P.		60.06		Banastus Famil. Glanayidi.				805	1		800.12	40	Bearden. Kimarörny	85	50	739	Straticiyos HIGS	P		80C.8
Mugdock Reserves (Banachari)	145	9600	7800	805 naphanor	P.		800.07	1	Chernal-Apples area	10	0008	1942	april and	-	-	EDC 26	40	B Demana	his	544	714	Brahutyde RHQS		had priority sile	
Mughth doubel putty	145	2756	1005	808 napmenor			800.11		Burnalisa Fare,	10	3110	3800	aphenor 801	-	-	EDC 10		in market	-	10	244	Skath-fyle Bridd		Mahihad with BOE	
Surgest game	-	-	1979	805			80C 10	18	Sheete and	1		144	601	6		100 M		Last Astrona	10		204	Studietyche Mittal	-	Outride EDC	-
Chaigmaildie Must and Auto Mines Life	1 10	9420	1965	\$03 ragmenter			8DC 14	1	Spectrum Ser.	10	3200	1940	BOIL manhance			HDC 20		Douglas Muir				Gradicion	-	Matchard with \$500	-
Patters Bught stranged query	16	19950	3005	804 mapmence			80C 10		Hungsyaris Bridge Collineal grane	1	-		808	-	Not priority		40	Quarty .	45	5-0	248 .	R108	-	Matchael	-
Couglas Mult Ouerly area	145	5360	1400	805 maphanes			80C 25	18	pts Mit Bughaut	56	3108	3640	maprosence BOS	-	Not priority		47	Cognette Mir	45	90	794	PIGS NO.			
Availabil Contails Creater	4			808				18	Burnin Bank,	56	3296	104r	expressor BOS	-		-	-10	Campon Gare	45	in	10	Daubutyak FEGS		with BOS	
Les of Ballenuck		2879	1740	803			100.0	f	Huntenhill Sanchatore Guarta	-	8.40	1180	aus aus	-	Not provide	100.4		Loss of Represents		-	-	Distriction in column		Making and Sold	
310,05	40	2808	1726	805 naproance		Next priority after		100	Coartel Rund	NS	4005	9905	magnemut BIG	-	ete			Larmanan.		-	798	Disabutyon Reco	-	Not printy	-
Laures Fash, Millinganite	145	3110	3710	803 maphenor		New proving sale		18	Potene	90	3548	3805	ingmenor 805	P		80C 2	84	Larminia	15	100	-	Stuticiyon Mical	-	10anie EDC	-
Better Lat.	10	1400	1300	800 majimence			800.4	18	Twenter Query Board Drage.	NG	2504	110	agmenor 805	P.		EDC 1		Mingavia				Stations	-	Matched with BOS	-
Bulling (Mildermal)			-	801			-	18	Dates Int. Dates	10	3800	3745	expressor BGS	-		EDC 3	82	autorootta	N6	882	742	Pr06	-	site Matched	-
Carban of	-	0.000	1245	855	-		800.31	18	Indexes and the	10	3000	3840	Augumence 805			EDC 10	55	Barr HL Tawner	46	799	798	Seuturyos R100		10.005 100	
Waterhoust Farm	-	4120	1000	800	r -	Not priority	00.9	18	Bahaptingge No J	50	101	1740	agmence 858	-	-	10C 28		Barrault purch	-	100	-	Seaturate Reco		with \$10.0	
In her inent	-		1000	800	-	Married .	-	18	Carefor Golf	-	1125	an	805	-		60C 20	05	Dental Lary	35	110	718	Stuthclyde RICO	-	Not proving	-
boundarys	145	0068	6215	napmenor	P	investigation Mate mark	-	16	Los Max	-	1114		808			and a						Deathclyce		Making with \$100	-
Lancetown Pures	M	#105	1156	805 napmenue		further musetigation		F		1			Instruction	-	Watched with BOIL		94	Barsalori Quarty	MB	101	14	NGS Statute	-	-	
Lancetown Crow Road	96	4243	7905	803 mapmenor	P		6DC 14	-	Lavestori I	NO	429	798	805	_	ala		10	Marse Burn (1551)	46	105	711	844	2		EDC 10
Buttel Ranne- Belgrischen butti				805		Mart net Arther		-	Bathore (201 point).	48	104	798	Shahulyon mos			1007	-	Baaradan Ruman Badha	80	541	721	HE			10C 2H

(Table 2) Initial list of potential geodiversity sites compiled from a variety of sources (see 3.1).

Table 7: Geological Scores For The Geodiversity Sites	Locality	Geoscientific Merit	Community Value	Education Value	Culture, Heritage & Economic Value	Total Score	Geodiversity Value	Local Geodiversity Site
Twechar Quarry	EDC 1	41	10	6	5	62	6	Yes
Castle Hill Quarry	EDC 2	22	10	4	16	52	5	Yes
Board Craig Quarry	EDC 3	22	8	4	4	38	3	Yes
Lenzie-Torphichen Dyke	EDC 4	29	9	6	3	47	4	Yes
Meltwater Channel	EDC 5	11	5	5	2	23	3	Yes
Bardowie Loch	EDC 6	12	9	5	4	30	3	Yes
R Kelvin Meanders	EDC 7	11	10	4	3	28	3	Yes
Kilmardinny Loch	EDC 8	10	10	5	3	28	3	Yes
Craigdhu Burn	EDC 9	0	10	2	2	14	0	No
Manse Burn SSSI	EDC 10	74	9	10	2	95	8	Yes
West Mugdock Quarry	EDC 11	24	9	4	6	43	4	Yes
Barraston Quarry	EDC 12	24	6	3	5	38	4	Yes
Blairskaith Quarry	EDC 13	46	6	8	8	68	7	Yes
Auld Wives' Lifts	EDC 14	34	7	5	13	59	6	Yes
Gallow Hill	EDC 15	16	10	3	3	32	3	Yes
Finniescroft Wood	EDC 16	31	5	4	8	48	5	Yes
Pattie's Bught	EDC 17	30	5	5	9	49	5	Yes
Table 7: Geological Scores For The Geodiversity Sites	Locality	Geoscientific Merit	Community Value	Education Value	Culture, Heritage & Economic Value	Total Score	Geodiversity Value	Local Geodiversity Site
Crow Road	EDC 18	40	10	6	4	60	7	Yes
Campsie Glen	EDC 19	59	10	6	10	85	8	Yes
Cowies Glen	EDC 20	52	2	5	4	63	6	Yes
Burniebrae Burn	EDC 21	55	4	5	5	69	7	Yes
Spouthead Burn	EDC 22	25	3	4	3	35	4	Yes
Douglas Muir Quarry	EDC 23	37	2	6	7	52	6	Yes
Roman Baths	EDC 24	5	9	5	11	30	6	Yes
Linn of Baldernock	EDC 25	50	6	8	8	72	8	Yes
Craigangawn Quarry	EDC 26	31	5	7	6	49	6	Yes
East Mugdock Quarry	EDC 27	45	10	6	8	69	7	Yes
Baldernock Mill	EDC 28	45	6	6	7	64	6	Yes
Inchbelle Quarry	EDC 29	25	0	4	6	35	4	Yes
Craigen Glen	EDC 30	27	9	5	8	49	5	Yes
Wilderness Plantation	EDC 31	32	5	6	7	50	6	Yes
Cawder Quarry	EDC 32	9	10	2	6	27	2	No
Bishopbriggs No2 Gravel Pit	EDC 33	43	5	2	5	55	5	Yes
Baldow Glen	EDC 34	45	8	3	6	62	6	Yes
Glenwynd	EDC 35	36	9	2	8	55	5	Yes
Torrance Meanders	EDC 36	11	3	5	11	30	3	Yes

(Table 7) Geological scores for the Geodiversity Sites.

Tweehar Quarry         EOC 1         Image	Table 8: Geological Features Visible at Geodiversity Sites	Locality	Ballagan Formationn	Clyde Plateau Volcanic Formation	Kirkwood Formation	Lawmuir Formation	Lower Limestone Formation	Limestone Coal Formation	Upper Limestone Formation	Passage Formation	Early Carboniferous Volcanic Plugs and Vents	Carboniferous to Early Permian Sills	Carboniferous to Early Permian Dykes	Geological Structures	Fossils and Palaeontology	Geomorphology	Quaternary Deposits/Feature	Economic Heritage	Built Heritage
Casite Hill Quarry       EDC 2       Image of Casite Quarry       EDC 3       Image of Casite Quarry       EDC 4       Image of Casite Quarry       Image of Casite Quarry       EDC 4       Image of Casite Quarry       Image of Casite	Twechar Quarry	EDC 1						8	•	1		•		•				•	
Baard Craig Quarry         EDC 3         Image         Total Craige         Total Craige <thtotal craige<="" th="">         Total Craige</thtotal>	Castle Hill Quarry	EDC 2										•				•		•	•
Lends-Torphichen Oyle         EDC4         Image Survey         EDC4         Image Survey	Board Craig Quarry	EDC 3										•	1					•	
Meltwater Channel         ECC 5         Image: Construction of the construction of th	Lenzie-Torphichen Dyk	EDC 4								-			•			•			
Bardowie Loch         EDC 6         Image Burn State         EDC 7         Image Burn State         Image B	Meltwater Channel	EDC 5						-								•	•		
R Keivin Meanders         EDC 7         Image	Bardowie Loch	EDC 6						1							1 2	٠	•		
Kilmardinny Loch         EDC 8         Image Burn SSS         EDC 10         Image Burn SSS         Image Burn SSSS         Image Burn SSS         Image Burn SSSS         Image Burn SSS         Image Burn S	R Kelvin Meanders	EDC 7														•	•		
Craight Burn         EDC 9         Image Burn SSSI         EDC 10         Image Burn SSSI         EDC 11         Image Burn SSSI         EDC 12         Image Burn SSSI         EDC 13         Image Burn SSSI         EDC 14         Image Burn SSSI         Image Burn SSSI SSI         Image Burn SSSI SSI SSI SSI SSI SSI SSI SSI SSI S	Kilmardinny Loch	EDC 8						6 B		· · · · ·		6	1 1			•	•		
Manse Burn SSS1       EDC 10       EDC 11       EDC 10       EDC 11       EDC 10       EDC 11       EDC 10       EDC 11       EDC	Craigdhu Burn	EDC 9						9 9		2	12				1				2
West Mugdok Quarry         EDC 11         Image: Constraint of the second	Manse Burn SSSI	EDC 10						•							•		•		
Barraston Quarry         EOC 13         Image: Constraint Quarry         EOC 15         Image: Constraint Quarry         Image: Constraint Quary <t< td=""><td>West Mugdock Quarry</td><td>EDC 11</td><td></td><td></td><td></td><td>•</td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>•</td><td>•</td><td></td></t<>	West Mugdock Quarry	EDC 11				•		1									•	•	
Bializatih Quary         EDC 13         Image: Constraint of the constraint of	Barraston Quarry	EDC 12					•											•	
Auld Wives' Lifts         EDC 14         Control	Blairskaith Quarry	EDC 13					•							•	•			•	
Gallow Hill         EDC 15         Image: Control Wood         EDC 16         Image: Control Wood         EDC 16         Image: Control Wood         EDC 17         Image: Control Wood         EDC 17         Image: Control Wood         EDC 17         Image: Control Wood         Image: Control Wood <thi< td=""><td>Auld Wives' Lifts</td><td>EDC 14</td><td></td><td></td><td></td><td>•</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>· · · · ·</td><td>٠</td><td>•</td><td>•</td><td>٠</td></thi<>	Auld Wives' Lifts	EDC 14				•									· · · · ·	٠	•	•	٠
Finnescroft Wood       EDC 16       Image: Solution of the solution the solution of the solution the solution	Gallow Hill	EDC 15														•	•		
Partie's Bught         EDC 17         Image: Comparison of the comparison of th	Finniescroft Wood	EDC 16					•	6 - 3		5	5	1			•		3	•	6.13
Crow Road         EDC 18         Image: Comparison of the com	Pattie's Bught	EDC 17				•		0 - 2		2					•			•	•
Campsie Gien         EDC 20         •	Crow Road	EDC 18	1	•								•				•	•		
Cowies Glen         LDC 20         LDC 3         LDC 3 <thld 3<="" th="">         LDC 3</thld>	Campsie Glen	EDC 19												•					1.1
Table 8: Geological Features Visible at Geodiversity Sites     Low Interfaces     Notice of the parts of the part			-													-			
Burnlebrae Burn       EDC 21       •	Cowies Glen	EDC 20					•		٠					•	•	-	•	٠	
Spouthead Burn       EDC 22       •	Cowles Glen Table 8: Geological Features Visible at Geodiversity Sites	EDC 20	Ballagan Formationn	Clyde Plateau Volcanic Formation	Kirkwood Formation	Lawmuir Formation	Lower Limestone Formation	Limestone Coal Formation	Upper Limestone Formation	Passage Formation	Early Carboniferous Volcanic Plugs and Vents	Carboniferous to Early Permian Sills	Carboniferous to Early Permian Dykes	Geological Structures	Fossils and Palaeontology	Geomorphology	Quaternary Deposits/Feature	Economic Heritage	Built Heritage
Douglas Muir Quarry EDC 23   Roman Baths EDC 24   Linn of Baldernock EDC 25   EDC 25 Image: Constraint of the second s	Cowles Glen Table 8: Geological Features Visible at Geodiversity Sites Burniebrae Burn	EDC 20	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation	Lawmuir Formation	Lower Limestone     Formation	Limestone Coal     Formation	Upper Limestone •	Passage Formation	Early Carboniferous Volcanic Plugs and Vents	Carboniferous to Early Permian Sills	Carboniferous to Early Permian Dykes	Geological     Structures	Fossils and     Palaeontology	<ul> <li>Geomorphology</li> </ul>	Quaternary Deposits/Feature	Economic Heritage	Built Heritage
Roman Baths       EDC 24       Image: Constraint of Baldemock       EDC 25       Image: Constraint of Baldemock       EDC 25       Image: Constraint of Baldemock       EDC 25       Image: Constraint of Baldemock       Image: Constraintof Baldemock       Image: Constrai	Cowies Glen Table 8: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn	EDC 20 EDC 21 EDC 22	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation	Lawmuir Formation	Lower Limestone     Formation	Limestone Coal     Formation	Upper Limestone Formation	Passage Formation	Early Carboniferous Volcanic Plugs and Vents	Carboniferous to Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures	Fossils and     Palaeontology	Geomorphology	Quaternary Deposits/Feature	Economic Heritage	Built Heritage
Linn of Baldernock       EDC 25       Image: Constraint of the second se	Cowies Glen Table 8: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry	EDC 20 EDC 21 EDC 22 EDC 23	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation	Lawmuir Formation	Lower Limestone     Formation	Limestone Coal     Formation	Upper Limestone Formation	Passage Formation	Early Carboniferous Volcanic Plugs and Vents	Carboniferous to Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures	Fossils and     Palaeontology	Geomorphology	Quaternary Deposits/Feature	Economic Heritage	Built Heritage
Craigangawn Quarry       EDC 26       • <td>Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Roman Baths</td> <td>EDC 20 EDC 21 EDC 22 EDC 23 EDC 23 EDC 24</td> <td>Ballagan Formationn</td> <td>Clyde Plateau     Volcanic Formation</td> <td>Kirkwood Formation</td> <td>Lawmuir Formation</td> <td>Lower Limestone     Formation</td> <td>Ermation</td> <td>Upper Limestone Formation</td> <td>Passage Formation</td> <td>Early Carboniferous Volcanic Plugs and Vents</td> <td>Carboniferous to Early Permian Sills</td> <td>Carboniferous to     Early Permian Dykes</td> <td>Geological     Structures</td> <td>Fossils and     Palaeontology</td> <td>Geomorphology</td> <td>Quaternary Deposits/Feature</td> <td>Economic Heritage</td> <td>Built Heritage</td>	Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Roman Baths	EDC 20 EDC 21 EDC 22 EDC 23 EDC 23 EDC 24	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation	Lawmuir Formation	Lower Limestone     Formation	Ermation	Upper Limestone Formation	Passage Formation	Early Carboniferous Volcanic Plugs and Vents	Carboniferous to Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures	Fossils and     Palaeontology	Geomorphology	Quaternary Deposits/Feature	Economic Heritage	Built Heritage
East Mugdock Quarry       EDC 27       • </td <td>Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Roman Baths Linn of Baldernock</td> <td>EDC 20 EDC 21 EDC 22 EDC 23 EDC 23 EDC 24 EDC 25</td> <td>Ballagan Formationn</td> <td>Clyde Plateau     Volcanic Formation</td> <td>Kirkwood Formation</td> <td>Lawmuir Formation</td> <td>Lower Limestone     Formation</td> <td>Entrope Coal     Formation</td> <td>Upper Limestone Formation</td> <td>Passage Formation</td> <td>Early Carboniferous Volcanic Plugs and Vents</td> <td>Carboniferous to     Early Permian Sills</td> <td>Carboniferous to     Early Permian Dykes</td> <td>Geological     Structures</td> <td>Eosils and     Palaeontology</td> <td>Geomorphology</td> <td>Quaternary Deposits/Feature</td> <td>Economic Heritage</td> <td>Built Heritage</td>	Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Roman Baths Linn of Baldernock	EDC 20 EDC 21 EDC 22 EDC 23 EDC 23 EDC 24 EDC 25	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation	Lawmuir Formation	Lower Limestone     Formation	Entrope Coal     Formation	Upper Limestone Formation	Passage Formation	Early Carboniferous Volcanic Plugs and Vents	Carboniferous to     Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures	Eosils and     Palaeontology	Geomorphology	Quaternary Deposits/Feature	Economic Heritage	Built Heritage
Baldernock Mill       EDC 28       •	Cowies Glen Table 8: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Roman Baths Linn of Baldernock Craigangawn Quarry	EDC 20 EDC 21 EDC 22 EDC 22 EDC 23 EDC 24 EDC 25 EDC 25	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation	Lawmuir Formation	Lower Limestone     Formation	Limestone Coal     Formation	Upper Limestone •	Passage Formation	Early Carboniferous     Volcanic Plugs and     Volcanic Plugs	Carboniferous to     Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures	Ecosils and     Palaeontology	e     e     Geomorphology	Quaternary Deposits/Feature	Economic Heritage	Built Heritage
Inchbelle Quarry       EDC 29       EDC 30       Image: Constraint of the state of the sta	Cowies Glen Table 8: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Roman Baths Linn of Baldernock Craigangawn Quarry East Mugdock Quarry	EDC 20 EDC 21 EDC 22 EDC 23 EDC 24 EDC 25 EDC 25 EDC 25 EDC 25	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation		Lower Limestone     Formation	Limestone Coal     Formation	Upper Limestone •	Passage Formation	Early Carboniferous     Volcanic Plugs and     Volcanic Plugs	Carboniferous to     Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures	Ecosils and Palaeontology	e      e      Geomorphology	Quaternary Deposits/Feature		Built Heritage
Craigen Glen EDC 30   Wilderness Plantation   EDC 31   Cawder Quarry   EDC 32   Bishopbriggs No2   Gravel Pit   Baldow Glen   EDC 35   Olenwynd   EDC 36	Cowies Glen Table 8: Geological Features Visible at Geodiversity Sites Burniebrae Burn Douglas Muir Quarry Roman Baths Linn of Baldernock Craigangawn Quarry Bast Mugdock Quarry Baldernock Mill	EDC 20 EDC 21 EDC 22 EDC 23 EDC 24 EDC 25 EDC 26 EDC 27 EDC 28	Ballagan Formationn	Olyde Plateau     Volcanic Formation	Kirkwood Formation		Lower Limestone     Formation	Limestone Coal     Formation	Upper Limestone •	Passage Formation	Early Carboniferous     Volcanic Plugs and     Vents	Carboniferous to     Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures		e      e      e      e      e      Geomorphology	Quaternary Deposits/Feature	Economic Heritage	Built Heritage
Wilderness Plantation       EDC 31       • • • •         Cawder Quarry       EDC 32       • • •         Bishopbriggs No2       EDC 33       • • • •         Gravel Pit       • • • •       • • • •         Baldow Glen       EDC 34       • • • •         Glenwynd       EDC 35       • • •	Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Roman Baths Linn of Baldernock Craigangawn Quarry East Mugdock Quarry Baldernock Mill Inchbelle Quarry	EDC 20 EDC 21 EDC 22 EDC 22 EDC 23 EDC 24 EDC 25 EDC 26 EDC 27 EDC 27 EDC 27 EDC 29	Ballagan Formationn	Olyde Plateau     Volcanic Formation	Kirkwood Formation		Lower Limestone     Formation	Entremation	Upper Limestone •	Passage Formation	Early Carboniferous     Volcanic Plugs and     Vents	Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures			Quaternary     Deposits/Feature	Economic Heritage	Built Heritage
Cawder Quarry     EDC 32     Image: Constraint of the second seco	Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Roman Baths Linn of Baldernock Craigangawn Quarry East Mugdock Quarry Baldernock Mill Inchbelle Quarry Craigen Glen	EDC 20 EDC 21 EDC 22 EDC 23 EDC 24 EDC 25 EDC 26 EDC 27 EDC 28 EDC 28 EDC 29 EDC 30 ED	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation		Lower Limestone     Formation	Limestone Coal     Formation	Upper Limestone Formation	Passage Formation	Early Carboniferous     Volcanic Plugs and     Volcanic Plugs and     Vents	Carboniferous to Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures			Ouaternary     Deposits/Feature		Built Heritage
Bishopbriggs No2 Gravel Pit     EDC 33     EDC 34     Image: Constraint of the state of the	Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Douglas Muir Quarry East Mugdock Quarry Baldernock Mill Inchbelle Quarry Craigen Glen Wilderness Plantation	EDC 20 EDC 21 EDC 21 EDC 22 EDC 24 EDC 25 EDC 26 EDC 26 EDC 27 EDC 28 EDC 29 EDC 29 EDC 29 EDC 20 EDC 20	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation		Lower Limestone     Formation	Limestone Coal     Formation	Upper Limestone •	Passage Formation	Early Carboniferous     Volcanic Plugs and     Volcanic Plugs and     Volcanic Plugs and	Carboniferous to Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures			Outletrnary     Deposits/Feature	Economic Heritage	Built Heritage
Baldow Glen         EDC 34         •	Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Roman Baths Linn of Baldernock Craigangawn Quarry East Mugdock Quarry Baldernock Mill Inchbelle Quarry Craigen Glen Wilderness Plantation Cawder Quarry	EDC 20 EDC 21 EDC 22 EDC 22 EDC 23 EDC 24 EDC 25 EDC 26 EDC 27 EDC 28 EDC 29 EDC 29 EDC 29 EDC 20 EDC 31 EDC 32	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation		Lower Limestone     Formation	Eormation	Upper Limestone •	Passage Formation	Early Carboniferous     Volcanic Plugs and     Volcanic Plugs and     Volcanic Plugs and	Carboniferous to     Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures				Economic Heritage	Built Heritage
Glenwynd EDC 35 • • • • • • • • • • • • • • • • • •	Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Roman Baths Linn of Baldernock Craigangawn Quarry East Mugdock Quarry Baldernock Mill Inchbelle Quarry Craigen Glen Wilderness Plantation Cawder Quarry Bishopbriggs No2 Gravel Pit	EDC 20 EDC 21 EDC 21 EDC 22 EDC 23 EDC 24 EDC 25 EDC 26 EDC 27 EDC 28 EDC 29 EDC 29 EDC 30 EDC 31 EDC 32 EDC 33	Ballagan Formationn	Clyde Plateau     Volcanic Formation	Kirkwood Formation		Lower Limestone     Formation	Entry Control Control Formation	Upper limestone •	Passage Formation	Early Carboniferous     Volcanic Plugs and     Vents	Carboniferous to Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures	Cossis and     Palaeontology		Ouaternary     Deposits/Feature		Built Heritage
Torrance Meanders EDC 36	Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Douglas Muir Quarry East Mugdock Quarry Baldernock Mill Inchbelle Quarry Craigen Glen Wilderness Plantation Cawder Quarry Bishopbriggs No2 Gravel Pit Baldow Glen	EDC 20 EDC 21 EDC 21 EDC 22 EDC 24 EDC 24 EDC 25 EDC 26 EDC 26 EDC 27 EDC 28 EDC 29 EDC 30 EDC 31 EDC 32 EDC 33 EDC 34	Ballagan Formationn	Cyde Plateau     Vokcanic Formation	Kirkwood Formation		Lower Limestone     Formation	Entry E	Upper timestone Formation	Passage Formation	Early Carboniferous     Volcanic Plugs and     Volcanic Plugs and     Volcanic Plugs and	Carboniferous to Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures				Economic Heritage	Built Heritage
	Cowies Glen Table S: Geological Features Visible at Geodiversity Sites Burniebrae Burn Spouthead Burn Douglas Muir Quarry Douglas Muir Quarry East Mugdock Quarry Baldernock Mill Inchbelle Quarry Craigen Glen Wilderness Plantation Cawder Quarry Bishopbriggs No2 Gravel Pit Baldow Glen Glenwynd	EDC 20 EDC 21 EDC 21 EDC 22 EDC 23 EDC 24 EDC 25 EDC 26 EDC 27 EDC 28 EDC 29 EDC 31 EDC 31 EDC 32 EDC 33 EDC 33 EDC 33	Ballagan Formationn	Clyde Plateau     Vokanic Formation	Kirkwood Formation		•     •	Entry E	Upper timestone Formation	Passage Formation	Early Carboniferous     Volcanic Plugs and     Volcanic Plugs and     Volcanic Plugs and	Carboniferous to     Early Permian Sills	Carboniferous to     Early Permian Dykes	Geological     Structures		e      e		Conomic Heritage	Built Heritage

(Table 8) Geological features at the Geodiversity Sites.