

Glossary.

This appendix provides a glossary of the sedimentological, geomorphological, and geological terms used throughout this report.

AEOLIAN - Pertaining to the wind. Used to describe landforms generated by the wind, or sediments transported by the wind.

ANASTAMOSED – A type of river planform that consists of multiple channels separated by stable islands which are large relative to the size of the channels and which divide the flow at discharges up to bankfull.

ARCHITECTURE - The collective geometries of a set of sediment bodies within a succession of sedimentary deposits.

AVULSION - The rapid switching of the course of a river channel.

BANKFULL – The discharge at which a river channel is completely full of water.

BAR – An elongate accumulation of sediment within a channel, formed where deposition occurs in a localised part of the river channel that has low discharge. May eventually be subaerially exposed above the average channel fill level. A key feature of braided rivers.

BASE LEVEL - The lowest level to which a stream can incise its bed; thus, ultimate base level is sea level.

BOUNDING SURFACE – A laterally extensive, erosional surface marking the boundary between two beds of sediment.

BRAIDED RIVER – A type of river planform that consists of multiple channels which are separated by relatively ephemeral bars and which are confined within a pairing of floodplain banks.

CLAST – A fragment of rock which has been transported by an agent of deposition, i.e., in this case by a river.

COBBLE – Grain-size classification referring to clasts between 64 and 256 mm in diameter, after the Udden-Wentworth grain-size classification scheme.

CROSS-STRATIFICATION – A common sedimentary structure created by the lateral migration of ripples or dunes, and which may occur in many different sedimentary environments. Appears in profile as an arrangement of thin layers of sediment that are inclined at an angle to bedding or a bounding surface. May have a ‘Planar’ form; whereby each inclined layer is straight, or a ‘Trough’ form; whereby each thin layer has a concave-upwards form. The former represent dunes or ripples with a straight crest, the latter represent those with a cuspatate, or curved, crest.

CRYOGENIC - Created by ice. Used to describe landforms generated or influenced by frost action.

DEFLATION - The erosion of sediment as a consequence of sand, dust, and loose rocks being removed by aeolian action.

DEVENSIAN - The last major glacial period of the Pleistocene in Britain, between about 80,000 years ago and 10,000 years ago.

DISCONFORMABLE - A situation whereby one layer of sediment lies on top of another layer of sediment as in any sedimentary sequence, but where there has been a significant hiatus in deposition between them, meaning that the upper layer is far younger.

FACIES – The sum total of features that characterise a sediment body as having been deposited in a specific sedimentary environment, e.g., grain-size, grain-sorting, sedimentary structures, sediment body geometry, bounding surfaces, etc.

FLOOD STAGE - The level of a river where overflow onto the floodplain can occur.

FLOOD SURGE - Rapid advance of flood waters.

FLUVIAL – Of, or pertaining to, a river (for ancient rivers: ‘palaeofluvial’).

GRAIN-SIZE (SANDS) – Dimensions of sand-grains used after the Udden-Wentworth grain-size classification scheme, whereby sand may be referred to as very coarse- (1-2 mm diameter), coarse- (0.5-1 mm), medium- (0.25-0.5 mm), fine- (0.125-0.25 mm), or very fine- (0.063 mm-0.125 mm) grained. Larger clasts are referred to as granules, pebbles, or cobbles (see elsewhere in this glossary).

GRANULE – Grain-size classification referring to clasts between 2 and 4 mm in diameter, after the Udden-Wentworth grain-size classification scheme.

HEMATITE - A form of iron oxide which occurs naturally in some sediments, giving them a red or reddish-brown colouration.

HOLOCENE – The unit of the geological timescale for the period between 10,000 years BP and the present day. The Holocene in Great Britain is characterised by environments which developed after the cessation of the last major glaciation at the end of the Pleistocene.

ICE-WEDGE CAST – A sedimentary structure consisting of nested conical structures that can be seen to penetrate downwards through a sedimentary layer – formed by repeated freezing and thawing of the ground surface in a periglacial environment.

INTERGLACIAL – A temporary period of warmer climate during an Ice Age.

LIGNITE – Black bituminous substance representing the early stages of coal development. Effectively rotten organic matter that has accumulated in a low oxygen environment prior to being buried by overlying sediments and compacted to 20% of its original thickness.

MEANDER LOOP CUT-OFF – The process by which a stretch of river that deviates from its course by looping back on itself is abandoned, thus reverting to a more straightened course.

MERCIA MUDSTONE GROUP – The bedrock of the study area described in this report, consisting of red mudstones and clays that were deposited during the Triassic.

OVERBANK DEPOSITS – Fluvial sediments which were deposited outside of the channel environment, as fine-grained material on the river floodplain.

PALAEOCURRENT DIRECTION – The direction of the former course of sediment and water transport.

PEBBLE – Grain-size classification referring to clasts between 4 and 64 mm in diameter, after the Udden-Wentworth grain-size classification scheme.

PERMAFROST - Subsurface layer of sediment which remains permanently frozen in ice throughout the year.

PLEISTOCENE – The unit of the geological timescale for the period between c. 1.7 million years BP to 10,000 years BP. The Pleistocene in Great Britain was characterised by widespread glaciations and sporadic interglacials (warmer climatic stages in between glacial periods). It is a significant period of human evolution.

PROGLACIAL STREAM – A river which is fed directly by melting from an associated glacier.

RIVER TERRACE - The remnant of an earlier floodplain, isolated by down-cutting of the river which resulted in a step-like morphology.

SCROLL BAR - As meander belts migrate they incise along their outside bank and deposit point bars along the inner part of the bend. As the channel continues to migrate, the old position of a point bar is preserved topographically as a system of ridge and swales on the ground surface, termed scroll bars.

SEDIMENTARY LOG - A graphic representation of a vertical section through a sedimentary succession, highlighting sediment type, internal structure, and sediment grain size (e.g. C=clay, FS=fine sand, S=sand, SG=sandy gravel, P=pebble, G=gravel).

TERTIARY – The unit of the geological timescale for the period between 64 million years BP and the beginning of the Pleistocene.

TRACTION CURRENT - Current of water at the sediment-water interface, which causes sediment particles to move by rolling or sliding them across the substrate.

YOUNGER DRYAS - A sudden cold climatic period that lasted for between 1100-1300 years during the final deglaciation of the Pleistocene, ending at c. 11,000 years BP.