
Glossary

This glossary provides brief explanations of the technical terms used in the introduction chapter and in the 'highlights' and 'conclusions' sections of the site reports. These explanations do not pretend to be scientific definitions but are intended to help the general reader. Detailed stratigraphical terms are omitted as they are given context within the tables and figures.

Angiosperm: Flowering plant.

Aragonite: A type of the rock-forming mineral calcium carbonate (CaCO_3), distinct from calcite. The shells of many invertebrate groups are made of this mineral.

Arenite (adj. arenaceous): Detrital sediment with sand-sized particles, cf. argillite.

Argillite (adj. argillaceous): Detrital sediment that is silt or clay rich, cf. arenite.

Aureole: Metamorphosed area adjacent to an igneous intrusion.

Bathyal: Oceanic zone of depths from 200 to 2000 m.

Baventian: A stage of the British Early Pleistocene defined in East Anglia.

Benthic: Living on or in the sea floor.

Biofacies: A facies defined by its characteristic fossil assemblage.

Bioclastic: Descriptive of rock made up of whole or fragmented organic detritus.

Biostratigraphy: The subdivision and correlation of sedimentary strata based on their fossil content.

Bioturbation: Disturbance and 'stirring' of soft sediments by burrowing organisms.

Bivalve: A mollusc, the shell of which comprises two valves that are typically, but not always, the same size and mirror images of each other, cf. brachiopod.

Brachiopod: A marine shellfish with two hinged shells (valves). Typically, the valves are dissimilar, with each valve bilaterally symmetrical. Particularly common in the Palaeozoic seas, but replaced by the molluscs as the dominant shellfish since Mesozoic times, cf. bivalve.

Brackish: Waters with salinities intermediate between fresh and marine waters.

Breccia: A coarse-grained sedimentary rock consisting of angular fragments, cf. conglomerate.

Bryozoan: Aquatic colonial organism (normally marine) composed of individuals living in linked box-like skeletons usually composed of calcium carbonate.

Cainozoic: See Cenozoic.

Calcarenite: Limestone formed mainly of calcium carbonate grains of sand size, cf. arenite.

Calcite (adj. calcitic): A common rock-forming mineral, calcium carbonate (CaCO_3). It has a different crystal structure, but the same chemical composition, as aragonite.

Calcareous: Calcium carbonate-bearing.

Calcrete: Calcareous soil, frequently indurated.

Celleporiform: A bryozoan growth-form where the colony assumes a spherical or globular shape. The colony may live attached to an erect substrate or loose on the sea floor.

Cenozoic: (= Cainozoic) The youngest era of geological time extending from 65 million years ago to the present and consisting of the Tertiary and Quaternary Sub-eras. Literally it means 'recent life'.

Cephalopods: A class of marine mollusc that includes the extinct ammonites, belemnites, and the living squid, cuttlefish, octopus and *Nautilus*.

Chalk: Lithostratigraphical unit comprising dominantly white limestone of Late Cretaceous age.

Characean: Appertaining to the charophytes.

Charophytes: Class of mainly freshwater calcareous algae.

Chine: Sharply incised valley intersecting a sea cliff.

Chron: A small unit of geological time, reflecting a period of constant or dominant polarity of the Earth's magnetic field.

Chronostratigraphical unit: A sequence of rocks deposited during a particular interval of geological time.

Clast: A rock or mineral fragment derived by erosion of older rocks. Most commonly used for coarser particles (>2 mm). See also bioclastic.

Coccoliths: A family of marine, unicellular, calcareous planktonic algae.

Coeval: Of the same age or time.

Concretion: Rounded or irregular mass of mineral matter concentrated around a nucleus formed during diagenesis in a sedimentary rock.

Conglomerate: A coarse-grained sedimentary rock consisting of well-rounded fragments, cf. breccia.

Coprolite: Fossil faecal pellets, often made of phosphate minerals.

Crag: A local East Anglian term for shelly sands.

Cretaceous: The last period of the Mesozoic Era, ranging from 140 to 65 million years ago.

Cross lamination/stratification: Laminae/ strata that were formed from sediments deposited at an angle to the horizontal, as a result of current flow. A vertical section through cross stratification reveals older beds to have angular discordance with, and be truncated by, younger layers.

Crustaceans: Sub-phylum of the Arthropoda, including crabs, lobsters etc..

Cryoturbation: Movements of the ground caused by seasonal freezing and thawing above a permanently frozen zone.

Cyclostome: A bryozoan of the order Cyclostomata.

Danian: Oldest stage of the Palaeogene Period.

Depocentre: Centre of (greatest) deposition.

Detritus (adj. detrital): Eroded loose rock and mineral matter.

Diachronous: Descriptive of a rock unit that is apparently continuous, but was in fact deposited in different places at different times, e.g. as a result of a marine transgression.

Diagenesis (adj. diagenetic): Small-scale changes of mineralogy and/or texture developed after deposition (excluding those due to subsequent metamorphism).

Dinoflagellates: Organic-walled unicellular, flagellate algae, some of which are siliceous.

Disconformity (adj. disconformable): A break in continuity of deposition, during which either no sediment is deposited or the sediment that has been deposited is subsequently eroded before the succession of strata continues without angular discordance.

Dogger: Type of large concretion.

Duricrust: A hard layer developed in certain soil types.

Echinoderms: Marine invertebrates usually characterized by a five-fold symmetry and possessing a calcite skeleton. Includes echi-noids (sea urchins), crinoids (sea lilies) and asteroids (starfish).

Eocene: Middle epoch of the Palaeogene Period.

Eon: The largest unit of geological time, divided into eras.

Epicontinental: Situated on the continental shelf or on the continental interior.

Epifauna: Organisms growing on the surfaces of others.

Epigenic: Descriptive of processes occurring at or near the Earth's surface.

Epoch: A chronostratigraphical unit larger than the 'Stage' and smaller than the 'Period' in extent.

Era: A large unit of geological time composed of several periods. The Phanerozoic Eon is divided into the Palaeozoic, Mesozoic and Cenozoic eras, and their constituent periods are defined on the basis of their characteristic contents of invertebrates, vertebrate and plant fossils.

Eschariform: A bryozoan growth-form where the colony assumes an erect foliaceous or laminar shape usually with a rigid basis of attachment.

Eurasia: The region extending from Europe to Asia (often implying a geographical unit or landmass).

Eustatic: Pertaining to world-wide changes of sea level that affect all the oceans.

Fades: The characteristic features of a rock unit, including rock type, mineralogy, fossils, texture and structure, which together reflect a particular sedimentary, igneous or metamorphic environment and/or process.

Feldspar: A group of aluminium-silicate rock forming minerals.

Ferruginous: Containing iron or iron minerals.

Fissure: A narrow or elongate opening or cavity.

Foraminifera (Forams): A type of single-celled animal having a mineralized, single- or multichambered-test (shell).

Formation: A lithostratigraphical unit, hierarchically higher than 'member' and lower than 'group'. A named 'Formation' represents an assemblage of strata that have a common characteristic useful for mapping.

Gastropods (Gastropoda): A class of marine, freshwater and terrestrial molluscs which live in a single, usually coiled shell.

Gauss normal chron: A chron representing 'normal' (as opposed to 'reverse') polarity of the Earth's magnetic field during the Pliocene Epoch.

GCR: Geological Conservation Review, in which nationally important geological and geomorphological sites were assessed and selected with a view to their long-term conservation as SSSIs.

Geochronology: The measurement of geological time and its division into episodes, in years, or millions of years, before present.

Gelasian: The youngest stage of the Pliocene Epoch but here considered as the oldest stage of the Pleistocene Epoch.

Glacioeustatic: Pertaining to the worldwide change in sea level as a result of successive withdrawal and return of water in the oceans accompanying the formation and melting of ice sheets.

Glaucconite: Hydrous potassium, iron, aluminium silicate.

Gley: The product of waterlogged soil conditions, often represented by colour mottling.

Gymnosperm: Plants that reproduce by 'naked' seeds (seeds not enclosed in carpel) e.g. pine, spruce.

Gyrogonite: Spherical to ovoid, calcareous female reproductive structure of the charo-phytes.

Hackly: Having a rough, sharp surface or fracture.

Halophytic: Salt-tolerant or -adapted (of plants).

Highstand: Phase of high sea level.

Hyposaline: Salinities below that of normal sea water.

Hypostratotype: Auxiliary reference section, cf. stratotype.

Ichnogenus: A 'genus' of trace fossil. See *also* taxonomic group.

Igneous: Formed from molten rock.

Induration: The process of hardening during which a soft sediment becomes a rock.

Inlier: An area of rock that is completely surrounded by younger rocks.

Intraclast: A fragment of lithified or cohesive sediment derived from coeval parent material rather than an 'older' (extraformational) source.

Intrusive rocks: Rocks that, in the molten state, were forced into pre-existing rocks and solidified without reaching the surface.

Isthmus: A connective neck of land.

Jurassic: The middle period of the Mesozoic Era, ranging from 195 to 140 million years ago.

Kainozoic: See Cenozoic.

Kaolinitic: Containing the clay mineral kaolinite (a hydrated aluminium silicate).

Laterite (adj. Lateritic): A weathering product (soil) rich in iron and aluminium oxides and hydroxides.

Lateritized: Altered to laterite, wholly or in part.

Lithofacies: A facies, defined by sedimentary rock type (using, for example, colour, texture and mineral composition).

Lithostratigraphy: The description and correlation of rocks in terms of their rock-type features, rather than fossil content.

Littoral: Living on or near the shore.

Maastrichtian: The youngest stage of the Cretaceous Period.

Magneto-biostratigraphy: Stratigraphy based on combining magnetostratigraphical and biostratigraphical data.

Magnetostratigraphy: Branch of stratigraphy based on the record of geomagnetic polarity reversals.

Magnetozone: A zone defined by the contemporary magnetic polarity of the Earth, assigned to chrons.

Massif: A very large topographic or structural feature.

Matrix: Mechanically introduced (rather than chemically precipitated) material between grains or clasts.

Matuyama reversed chron: A chron representing a time of reversed polarity in the Earth's magnetic field during the early part of the Pleistocene Epoch.

Mesohaline: 'Middle' of the brackish water range.

Mesozoic: The middle era of the Phanerozoic Eon, spanning the Triassic to the base of the Tertiary, (i.e. after the Palaeozoic, but before the Cenozoic), from 230 to 65 million years ago. Literal meaning is 'middle life'.

Metamorphism: The change process in rocks caused by heat and pressure, but without melting.

Micrite: Limestone composed of microcrystalline calcite.

Miocene: Older of the two epochs of the Neogene Period.

Molluscs (Mollusca): Invertebrates with a fleshy soft body and, usually, a hard shell. May be marine, freshwater or terrestrial. Includes gastropods (snails, limpets), bivalves (oysters, mussels), cephalopods etc., but a different taxonomic group to brachiopods.

Monocline: A single-limbed flexure on either side of which strata are horizontal or dip in the same direction at a relatively low angle.

Nannoplankton: Small plant plankton.

Nannostratigraphy: Stratigraphy based on the use of nannoplankton.

Neogene: Younger period of the Tertiary Sub-era.

Nummulites: Large foraminiferid genus.

Olduvai subchron: A normal polarity event within Matuyama reversed chron.

Oligocene: Youngest epoch of the Palaeogene Period.

Oolith: A spherical to subspherical carbonate-coated grain.

Ophiuroid: Brittle star, a type of echinoderm.

Ostracods: A class of crustaceans. Each has two calcareous valves and most are <1 mm in size. Throughout their long geological history (Cambrian–Recent) they have diversified into a wide range of aquatic ecological niches both on land

and at sea.

Otoliths: 'Ear bones' of fishes.

Outliers: Geographically, where younger rocks are surrounded by older rocks.

Palaeocene: Oldest epoch of the Palaeogene Period.

Palaeogene: Older period of the Tertiary Sub-era.

Palaeopedology: The study of fossil soils.

Palaeozoic: Ancient life', the first major division of geological time that is characterized by abundant life and which is preceded by the Proterozoic and succeeded by the Mesozoic; divided into six periods from the Cambrian to the Permian.

Palustrine: Lake margins.

Palynology: The study of pollen, spores and certain other microfossils such as dinoflagellates.

Paralic: Descriptive of coastal regions.

Pastonian: A stage of the British Early Pleistocene defined in East Anglia.

Pedogenesis: Origin and formation of soils.

Period: A unit of geological time, hierarchically lower than Era.

Permineralization: The deposition of mineral matter within organic tissues (and sometimes also called petrification).

Petromictic: Comprising a mixture of different rock types (normally with regard to sediment pebble composition).

Phanerozoic: Period of time comprising the Palaeozoic, Mesozoic and Cenozoic Eras, commencing around 540 million years before present.

Phytoplankton: Plant plankton.

Pisolith: Carbonate coated grain (particle) >2 mm in diameter.

Plankton(ic): Minute aquatic organisms that drift with water movement.

Pleistocene: Older epoch of the Quaternary Sub-Era.

Pliocene: Younger epoch of the Neogene Period.

Polycyclically: Involving >1 and often a number of cycles (usually referring to sedimentation).

Pyrite: (adj. pyritic). 'fire stone', an iron sulphide mineral (FeS_2) common within sediments, resulting from the biochemical action of bacteria within anaerobic environments.

Pyritized: Altered to the mineral pyrite (FeS_2).

Pyroclastic: Fragmentary material of volcanic origin.

Quaternary: The younger Sub-era of the Cenozoic Era, the beginning of the Quaternary is taken as about 2.4 million years ago in this volume and it extends to the present.

Radiometric dating: Methods of dating certain rocks or minerals using the relative abundances of radioactive isotopes of certain elements and their decay products.

Rhizcretion (Rhizoconcretion): Concretion formed where mineralization (normally the precipitation of calcite) forms around or replacing roots.

Rhizolith: Concretion (normally calcitic) replacing root.

Rudaceous: Sediments characterized by particle size >2 mm.

Sapropel(ic): Organic sludge (normally rich in carbon) accumulated on a lake, sea etc. bed.

Schorl: Black variety of the mineral tourmaline.

Serpulids: Worms that secrete calcareous tubes.

Silcrete: Duricrust characterized by the dominance of silica minerals.

Siliceous: Silica-bearing.

Silicified: Altered partially or totally to silica.

Silicoplankton: Plankton with siliceous skeletons.

SSSI: Site of Special Scientific Interest. The designation of an area of land for statutory protection under the provisions of the *Wildlife and Countryside Act 1981*.

Stage: A chronostratigraphical unit.

Stratigraphy: The study of rock strata and their distribution in space and time.

Stratotype: A sequence of sedimentary rocks at a particular locality chosen as the standard against which other sequences can be compared (also called a type section or locality). Stratotypes are established for lithostratigraphical and biostratigraphical units, both regionally and internationally.

Subaqueously: Within a body of water.

Sub-era: Sub-division of an Era.

Successions: In stratigraphy, a sequence of sedimentary rock units.

Taxonomic group: A unit of classification of organisms (e.g. phylum, class, order, family, genus, species).

Tectonic: Pertaining to the deformation of the Earth's crust and the consequent structural effects (e.g. faulting, folding etc.).

Teleosts: Bony fishes.

Tertiary: The younger Sub-era of the Cenozoic Era, ranging from 65 to 2.6 or 1.6 million years ago (see discussion on p. 237).

Thanetian: The younger stage of the Palaeocene Epoch.

Thermophilic: Organisms requiring, or thriving best, in a high temperature.

Trace fossil: A structure preserved in a sedimentary rock that indicates biological activity, e.g. burrows, trails and footprints.

Transgressive: Where water (normally the sea) advances over land, due to vertical movements of the Earth's crust or to a rise in water level.

Type locality: The location where the type section (or stratotype) for a stratigraphical unit is located, or where the original type section or fossil was first described.

Type section: See Stratotype.

Unconformity: The surface separating a younger sedimentary sequence from an underlying older rock sequence which represents a gap in the geological record when there was erosion and/or no deposition. There is often an angular discordance between the two sequences, cf. disconformity.

Zeolites: Group of hydrated aluminium silicates of sodium, potassium, calcium and barium.

[References](#)