

# OR/18/003 Modelled surfaces/volumes

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Shelley, C, and Burke, H. 2018. Model metadata report for the South Downs teaching model. *British Geological Survey Open Report*, OR/18/003.

The South Downs 3D model comprises ten bedrock units based on the corresponding 1:250 000 scale mapping. These bedrock units are listed in their relative stratigraphic order in Table 1. Groupings are shown where modelled units are subdivided on the geological map. Table 1 should be used as the key for viewing images of the model in this report. Lithological descriptions are taken from the BGS Lexicon of Named Rock Units on the BGS web site at: <http://www.bgs.ac.uk/lexicon/>

Table 1 List of the ten modelled bedrock units in relative stratigraphic order.

Name/LEX-RCS	Full name	Description
BRB	Bracklesham Group	Interbedded to interlaminated clays, silts and mostly fine to medium grained sands, locally shelly. Glauconite occurs in the mod part of the sequence. Minor coarse grained sands, gravelly sand, gravel beds, sandstones or ironstone concretions occur in places
THAM	Thames Group, comprising London Clay Formation and Bagshot Formation	Silty clay/mudstone, sandy silts and sandy clayey silts of marine origin
PAL	Palaeogene (Lambeth Group and Thanet Formation)	Lambeth Group: vertically and laterally variable sequence, mainly of clay, some silty or sandy, with some sands and gravels, minor limestones and lignites and occasional sandstone and conglomerate. Thanet Formation: glauconite coated nodular flints at base, overlain by pale yellow brown fine grained sand, which can be clayey and glauconitic. Rare calcareous or siliceous sandstones
UCK	Upper Chalk Formation (Lewes Chalk Formation to Portsdown Chalk Formation)	White chalks with beds of flint, nodular chalks, hardgrounds and marl seams
MCK	Middle Chalk Formation (New Pit Chalk Formation to Holywell Chalk Formation)	White pure chalk with some flint seams and very shelly beds. Comprises from base: hard indurated chalk with flaser marls (Melbourn Rock) to exceptionally shelly chalk with flints into chalk with well-defined marl seams
LCK	Lower Chalk Formation (Grey Chalk Subgroup)	Grey marly flint-free chalk with mark content decreasing upwards. Comprises a thin basal glaugonitic marl (Cambridge Greensand) overlain by a more typical Lower Chalk sequence that is usually divided into a lower 'Chalky Marl' with rhythmic alternations of chalk and marl, and an upper 'Grey Chalk' separated by a distinctive hard band (Tottenhoe Stone)
UGS	Upper Greensand Formation	Sand and sandstone, fine grained, silt, glauconitic, shelly

GLT	Gault Formation	Pale to dark blue-grey clay or mudstone, glauconitic in part, with a sandy base. Discrete bands of phosphate nodules (commonly preserving fossils), some pyrite and calcareous nodules
LGS	Lower Greensand Group	Mainly sands and sandstones (varying from well sorted, fine grained to poorly sorted medium to coarse grained) with silts and clays in some intervals
W	Wealden Group	Interbedded thick sandstones, siltstones, mudstones ('shales'), limestones and clay ironstones of predominantly non marine facies

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