

Terrace gravels, Quaternary, Bristol and Gloucester region

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Green, G W. 1992. British regional geology: Bristol and Gloucester region (Third edition). (London: HMSO for the British Geological Survey.)

Oxygen Age isotope stage	River terraces			Other drift deposits	Events
	Severn	W A*	Bristol Avon & (Frome)		
1	Handrian	Alluvium		Estuarine & marine alluvium, peat, etc. of Somerset & other levels	Post-glacial rise in sea level
2	10	1st (Power House) (single channel deposits)	1st (Bristol Avon) (inc. buried channel deposits)	Fan gravels of Cotswolds, Mendips, etc. Chalfonts and Mendips and Wye valley Cave deposits of Mendips and Wye valley Howe Rock Platform & other low-level wave-cut platforms Head & breccia deposits including those overlying raised beach deposits	Glacial diversion of Severn through Ironbridge Gorge at maximum ice advance Upton Warren interstadial followed by tundra climate
		Late Devensian	2nd (Worcester)		
3	25	3rd (Main)	2nd (Cairncross)	2nd Bristol Avon	Upton Warren interstadial followed by tundra climate
		Mid	3rd (Leaden tributary)		
4	30	Early	3rd Bristol Avon (3rd Whitminster)	3rd Bristol Avon (3rd Whitminster)	Mainly tundra climate
5a-c	Ipswichian			Raised beach deposits Burtle Beds Ken marine sands	
6					Cold period
7	130		4th upper	?Raised beach deposits	Temperate period
8	230	'Weald-stonian'	4th (Kidderminster)	Colluvial deposits on raised beach platforms	Glaciers in Midlands & South Wales
			4th lower		
9-11	300	Hoxnian (in part)	5th (Bustley Green)	Ken River/Yew Tree Farm fluvial deposits wave-cut platforms up to 14 m +	Temperate with intervening colder stage
			5th/6th		
12	430	Anglian	Wooldridge (fluvioglacial)	'Chalky boulder clay' † Paved gravel ‡ Till, fluvioglacial & lake clays in the Vale of Gloucester Campden Tunnel Drift Ken Gravels, Kempier Till Court Hill gravels & till	Glacial. Bristol Channel glacier, overflow channels in the Bristol area. Lake Harrison in the Midlands
			480		
13	480	Cromerian		Westbury-sub-Mendips fluore deposits ? Stretton Sand	Temperate
			520		
Pre-Cromerian stages				Northern Drift Formation ? High-level deposits in the Bath-Bristol area	Alternating cold/interglacial & temperate periods

*Warwick Avon † (Stroud) ‡ Moreton Drift

Correlation of the drift deposits of the Bristol-Gloucester region. (P948999)

Terrace gravels

Fluvioglacial gravels are directly related to an ice-front, unlike river terrace gravels, which are formed within ice-free valleys. The only Severn terrace with claims to be regarded as fluvioglacial is the highest Wooldridge Terrace, known south of Tewkesbury, where its base is about 65 m above the present alluvium surface. This is considered to be the outwash of the Severn valley glacier that was partly responsible for ponding up Lake Harrison.

The main river terraces are numbered upwards according to their height above the alluvium, which is in a series of increasing age. The gradient of most of the terraces on the Severn is greater than that of the alluvium and hence their height above the alluvium decreases downstream; thus the Worcester Terrace (Second) disappears beneath the alluvium at Gloucester.

Generally, the terrace deposits are of sand and gravel, the latter consisting of 'Bunter' quartzite

pebbles, flints and rolled fragments of local rocks. The gravel of the older terraces is often extremely coarse in texture. Due to the Ironbridge diversion the Main and later terraces of the River Severn show an influx of Irish Sea glacial erratics such as igneous rocks from Scotland and the Lake District.

The River Frome (Stroud Water) which joins the Severn near Framilode has three terraces, which have been correlated with those of the Severn ([P948999](#)). The gravels consist almost entirely of rolled Jurassic rocks. From the chief of these deposits, the Cairncross Terrace, which is correlated with the Severn Main Terrace, a cold fauna has been obtained: this includes mammoth, woolly rhinoceros and musk ox. The lower part of the terrace merges into fan gravel.

In the coastal regions of Gwent, five gravel terraces are shown on the Survey maps; the first of these is apparently equivalent to the Main Terrace, the second to the Kidderminster Terrace and the fourth to the Bushley Green Terrace of the main Severn sequence.

Terrace gravels occur along the Bristol Avon. At Victoria Pit, Twerton, Bath, the third terrace, with a base at about 42 m above OD and 24 m above the alluvium, is composed mainly of local Jurassic rocks. The fauna includes a mixture of temperate forms, such as the straight-tusked elephant and red deer, and cold forms, such as the mammoth and woolly rhinoceros. The second terrace occurs between Keynsham and Bathampton with a surface ranging from 9 to 15 m above the alluvium. No systematic record of fossils is available. The first terrace gravels fill the valley bottom, including the buried channel, and are aggraded up to about 3 m above the present alluvium surface. The buried channel has been reported upstream as far as Bathampton and the deepest record so far is 17 m below OD at Avonmouth. The mammalian remains reported from the upper surface of the gravel are referable to the Flandrian alluvium. In the absence of more data the correlations shown in [P948999](#) are probable but unproven.

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