The English Chalk Streams

An index of English chalk-streams ought to begin with a definition. Various technical definitions of a chalk-stream have been proposed: for example “streams that derive 75% of their flow from chalk groundwater and flow over a chalk geology”.

But firm definitions fail to capture a three-dimensional reality which varies greatly from one valley to the next.

In reality we have what is more like a spectrum of chalk-streams and chalk-influenced streams, rivers which derive *most* of their flow from chalk-fed groundwater, and exhibit – in varying degrees depending on the particular geology of a given valley – the ‘classic’ chalk-stream characteristics of clear water and equable flows.

Imagine the landscape as a layered cake, with the chalk sandwiched between younger rocks (sands and clays) above and older rocks (greensands) below, each of which exert their own discrete influence on the appearance of a landscape and the character of its rivers. Now, if you tilt the cake and run a cake slice across the raised edge you have a very simple version of the landscape of southern England. A band of chalk is exposed at the surface with older rocks (generally to the north and west) at the foot of the steep scarp-face of the chalk, and younger rocks beyond the longer more gently inclined slope-face of the chalk.

With this tilted and stratified landscape in mind, some broad categorisation of chalk-streams can be attempted.

If we describe a chalk-stream as a river which derives a significant proportion of its flows from chalk groundwater:

Group A comprises streams that rise directly from the chalk and subsequently flow over younger Tertiary (sand and clay) deposits. This group would include the majority of the Hampshire Basin Streams and the majority of those which flow in to the Thames Basin. These tend to be the slope-face streams and are generally longer than scarp-face streams. Most of the iconic chalk-streams like the Itchen or Test or Kennet are in this group.

Group B comprises streams which rise beyond the chalk and subsequently flow over/through the chalk - a minority of streams but the Great Stour in Kent is a good example, rising on the Gault clay/Greensand and then flowing through the chalk. The Nadder is another example, as is the Hampshire / Wiltshire Avon and the Dorset Frome. These streams will have less equable flow regimes than Group A streams, will tend will colour after heavy rain and take longer to clear too. The flow regime makes these rivers subtly more deeply incised in the landscape than the classic Group A streams.

Group C comprises streams rising from chalk which was directly impacted by major glacial action during the Pleistocene Ice Age. This would include some northern Chiltern streams and the East Anglian, Lincolnshire and Yorkshire streams. Group C could be further subdivided into streams which flow from chalk over glacial outwash deposits and those that flow from chalk onto older (pre-glacial) river deposits, such as the pre-glacial Bytham River which flowed eastwards from the Midlands across Norfolk and emptied into the North Sea north of Lowestoft.

Group D comprises the scarp slope streams which all tend to run for a very short distance over older (clay rich) chalk and then flow out onto the underlying Gault Clay and Greensand beds. The Fontmell Brook and Iwerne stream in Dorset are scarp-slope streams, as are the streams north of the Chilterns, the westward flowing streams in north-west Norfolk, and all the streams east of the Yorkshire Wolds.

In 2004 the **Environment Agency** indexed 160 chalk-streams in the **Biodiversity Action Group** report ***The State of England’s Chalk Rivers***. The index in this paper includes the rivers listed in that 2004 BAP report and is an attempt to go into more detail and itemise all English chalk-streams according to the definitions above. It was complied using high detail geological maps available online via the British Geological Survey Map viewer in conjunction with online satellite maps and local knowledge.

It would be almost impossible to list every single distinct rivulet in any given catchment (many are no more than occasionally wet furrows, and on the scarp slopes there are often hundreds of springs along the spring-line that never quite amount to a river).

So, on the whole whether or not to count a given stream as a distinct chalk-stream is based on a common-sense call according to whether the river flows from or largely over chalk, is named on a map (the complete 1946 series has been used for reference as it precedes the distortions of post-war land drainage), and is known as a chalk-stream or has the characteristics of one.

But the list is almost certainly not complete. Feedback from those who know given areas intimately would be much appreciated.

The lay-out of the Index.

Rivers are best understood as catchments and are therefore indexed by catchment as well county.

The main river (not always a chalk stream) is the lead name and the uppermost tributary is indented and listed first, the lowermost last etc.

Tributaries of tributaries are indented one step further etc.

A few chalk-streams flow directly into the sea, forming minor catchments.

Rivers of mixed definition have footnotes.

Some rivers that are not chalk-streams are listed to help make sense of the catchments – *these are in italics*.

Credits and feedback

Please make free use of this index for reference or research, but please credit Charles Rangeley-Wilson and Dr. Haydon Bailey, as well as the Environment Agency who compiled the first index in 2004 and WWF.

Please send any feed-back to help make the index more accurate to me at the contact email on this website. I will credit contributors.

The Index of English Chalk-Streams

Wessex – all the chalk-steams that flow south into the English Channel

River Bride[1] – flows directly into the English Channel (Dorset)
– Litton Cheney Brook (Dorset)

River Wey – flows directly into the English Channel (Dorset)

River Jordan – flows directly into the English Channel (Dorset)

Wessex – all the chalk-steams that flow south into Bournemouth Harbour

River Frome[2] – flows into the Bournemouth Harbour (Dorset)
– Wraxall Brook[3] (Dorset)

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[1] rises on chalk flows over thick surface deposits of clay, silt and sand and gravels

[2] headwaters derive from a mix of grey and white chalk, greensand and clay with flints

[3] derives from a mix of grey and white chalk, greensand and clay with flints

– River Hooke[4] (Dorset)
– Compton Valence Stream (Dorset)
– West Compton Stream (Dorset)
– Sydling Water (Dorset)
– River Cerne (Dorset)
– South Winterboure (Dorset)
– Tadnoll Brook (Dorset)
– River Wyn (Dorset)

River Piddle – flows into the Bournemouth Harbour (Dorset)
– Devil's Brook (Dorset)
    – Cheselbourne (Dorset)
– Bere Stream (Dorset)

Wessex – all the chalk-steams that flow south into Christchurch Harbour

River Stour – flows into Christchurch Harbour
– Shreen Water[5] (Dorset)
– Fontmell Brook[6] (Dorset)
– Iwerne Stream (Dorset)
– Charlton Marshall Stream (Dorset)
– River Tarrant (Dorset)
– North Winterbourne (Dorset)
– River Allen (Dorset)
    – Crichel Stream (Dorset)
    – Gussage Stream (Dorset)
– River Crane (Dorset)

River Avon[7] – flows into Christchurch Harbour (Wiltshire and Hampshire)
– Eastern Avon[8] (Wiltshire)
– Nine Mile River (Wiltshire)
– River Wylye (Wiltshire)
    – Heytesbury Bourne (Wiltshire)
    – Chitterne Brook (Wiltshire)
    – River Till (Wiltshire)
– *River Nadder*[9]
    – West Fonthill or Fonthill Bishop Stream[10] (Wiltshire)
    – Ansty Stream[11] (Wiltshire)
    – Swallowcliffe Stream[12] (Wiltshire)
    – Chilmark Stream[13] (Wiltshire)

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[4] derives from a mix of grey and white chalk, greensand and clay with flints

[5] rises on chalk flows over thick surface deposits of clay, silt and sand and gravels

[6] chalk springs – flows over Gault and Upper Greensand Formation mudstone and sandstone

[7] headwaters derive from a complex mix of grey chalk, Gault and Upper Greensand Formation and clay with flints

[8] derives from a complex mix of grey chalk, Gault and Upper Greensand Formation and clay with flints

[9] considered a 'chalk-stream' but in fact flows over complex mix of Gault and Upper Greensand Formation, Thames Group clays, Portland Group limestones and calcareous sandstones. Chalk-fed tributaries progressively influence the character of the river.

[10] derives from chalk springs in extreme headwaters

[11] derives from chalk springs in extreme headwaters

[12] derives from chalk springs in extreme headwaters

[13] derives from chalk springs in extreme headwaters

– Teffont Stream[14] (Wiltshire)
– Fovant Stream[15] (Wiltshire)
– River Bourne (Wiltshire)
– River Ebble (Wiltshire)
– Chalke Water (Wiltshire)
– Allen River also known as Ashford Water (Hampshire)
– Bullhill Stream[16] (Hampshire)
– Sweatfords Water also known as Rockbourne Stream (Hampshire)

Wessex – all the chalk-steams that flow south into The Solent

River Test – flows into Southampton Water (Hampshire)
– Bourne Rivulet (Hampshire)
– River Swift (Hampshire)
– River Dever (Hampshire)
– River Anton (Hampshire)
– Pilhill Brook (Hampshire)
– Wallop Brook (Hampshire)
– Somborne Stream (Hampshire)
– River Dun (Hampshire)

River Itchen or Tichborne in its headwaters – flows into Southampton Water (Hampshire)
– River Alre (Hampshire)
– Candover Brook (Hampshire)

River Meon – flows directly into the Solent (Hampshire)
– Whitewool Stream (Hampshire)

River Ems – flows into Emsworth Water / The Solent (Sussex)

River Lavant – flows into the Chichester Channel / The Solent (Sussex)

Thames – all the chalk streams that flow into the Thames and Thames Estuary

River Thames
– Letcombe Brook (Oxfordshire)
– Lockinge Brook or West and East Hendred Brook (Oxfordshire)
– *River Thame*
– Horsenden Stream[17] (Oxfordshire)
– River Chalgrove[18] (Oxfordshire)
– River Ewelme (Oxfordshire)
– River Pang (Berkshire)
– The Bourne (Berkshire)
– River Kennet (Berkshire)
– River Og (Berkshire)
– Aldbourne (Berkshire)
– River Dun (Berkshire)
– Shalbourne (Berkshire)

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[14] derives from chalk springs in extreme headwaters

[15] derives from chalk springs in extreme headwaters

[16] a small unnamed chalk tributary that flows under Bullhill

[17] forms from a series of springs at the foot of the Chilterns scarp near Princes Risborough – flows over Gault and Upper Greensand Formation mudstone and sandstone

[18] rises as a series of springs at the foot of the Chilterns scarp near Watlington – flows over Gault and Upper Greensand Formation mudstone and sandstone

– Lambourne (Berkshire)
– River Loddon[19] (Hampshire)
– River Lyde[20] (Hampshire)
– *River Blackwater*
– River Whitewater[21] (Hampshire)
– Hambledon Stream (Buckinghamshire)
– River Wye (Buckinghamshire)
– Hughenden Stream (Buckinghamshire)
– River Colne (Hertfordshire and Buckinghamshire and Greater London)
– The Brook (Hertfordshire)
– River Ver (Hertfordshire)
– River Gade (Hertfordshire)
– Bulbourne (Hertfordshire)
– River Chess (Hertfordshire and Buckinghamshire)
– River Misbourne (Buckinghamshire)
– River Wey[22]
– Tillingbourne (Surrey)
– Hogsmill[23] (Surrey)
– River Wandle[24] (Greater London)
– River Lea (Hertfordshire)
– River Mimram (Hertfordshire)
– River Beane (Hertfordshire)
– Old Bourne or Dane End Tributary (Hertfordshire)
– River Rib (Hertfordshire)
– River Quin (Hertfordshire)
– River Ash (Hertfordshire)
– River Stort (Hertfordshire)
– Bourne Brook (Hertfordshire)
– River Darenth (Hertfordshire)
– River Cray (Hertfordshire)

Thames – all the chalk streams that flow into the English Channel

Great Stour – flows into English Channel (Kent)
– Little Stour (Kent)
– Nail Bourne (Kent)
– Wingham River (Kent)
– North Bourne or North Stream (Kent)

River Dour (Kent - flows into English Channel)

East Anglia – all the chalk-streams that flow into The River Ouse

River Ouse
– River Ivel (Hertfordshire and Bedfordshire)
– Cat Ditch (Hertfordshire)
– River Purwell or Hiz (Hertfordshire and Bedfordshire)
– River Oughton (Hertfordshire)

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[19] rises on chalk but flows over London Clay Formation

[20] rises on chalk but flows over London Clay Formation

[21] rises on chalk but flows over London Clay Formation

[22] western branch of River Wey is a chalk-stream in its headwaters near Alton

[23] largely urban, rises at the foot of Nth Downs scarp and flows over London Clay.

[24] largely urban, rises at the foot of Nth Downs scarp and flows over London Clay.

– River Cam (also known as Granta, not to be confused with the Granta tributary) (Essex and Cambridgeshire)
    – Debden Water (Essex)
    – Wicken Water (Essex)
    – Fulfen Slade (Essex)
    – The Slade (Essex)
    – River Granta (Cambridgeshire)
        – River Bourne (Cambridgeshire)
– River Rhee (also known as Cam, not to be confused with the main Cam to the east) (Hertfordshire and Cambridgeshire)
    – Cheney Water becomes Mill River becomes North Ditch (Cambridgeshire)
    – Bassingbourne (Cambridgeshire)
    – Kneeswell Stream (Cambridgeshire)
    – Melbourne (Cambridgeshire)
    – River Shep (Cambridgeshire)
    – Hoffer Brook (Cambridgeshire)
– Hobson's Brook[25] (Cambridgeshire)
– Cherry Hinton Brook[26] (Cambridgeshire)
– Quy Water[27] (Cambridgeshire)
    – Little Wilbraham River (Cambridgeshire)
    – Fulbourne (Cambridgeshire)
– Mill Stream[28] (Cambridgeshire)
– New River[29] (Cambridgeshire)
– Snail River (Cambridgeshire)
– River Lark (Suffolk)
    – River Linnett (Suffolk)
    – River Kennett (Suffolk and Norfolk)
    – Tuddenham Mill Stream (Suffolk)
– Little Ouse (Suffolk and Norfolk)
    – The Black Bourne or Sapiston Brook[30] (Suffolk)
    – Pakenham Fen (Suffolk)
    – Walsham Stream[31] (Suffolk)
    – River Thet (Norfolk)
– River Wissey[32]
    – River Gadder (Norfolk)
    – Beachamwell Stream (Norfolk)
– River Nar (Norfolk)

East Anglia – all the Norfolk chalk-streams that flow into The Wash

River Babingley – flows into The Wash (Norfolk)

River Ingol – flows into The Wash (Norfolk)

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[25] a very urbanised stream in Cambridge

[26] a very urbanised stream in Cambridge

[27] drains into Bottisham Lode

[28] drains into Swaffham Fulbeck Lode

[29] rises at Seven Springs or Favin's Head and drains into Burwell Lode

[30] rises on Crag Group sand but middle reaches flow over chalk

[31] apparently unnamed – rises at Walsham le Willows and flows over chalk

[32] chalk bedrock overlain with thick deposits of glacial till

River Heacham – flows into The Wash (Norfolk)

River Hun – flows into The Wash (Norfolk)

East Anglia – all the Norfolk chalk-streams that flow from The North Sea

River Burn – flows into The North Sea (Norfolk)

River Stiffkey – flows into The North Sea (Norfolk)
– Binham Stream

River Glaven – flows into The North Sea (Norfolk)

East Anglia – all the chalk-streams that flow into The Norfolk Broads

River Bure[33] – flows into The Norfolk Broads (Norfolk)
– The Black Water[34]
  – Craymere Beck[35]

River Yare[36]
– River Wensum
  – River Tat
  – Whitewater[37]
    – Blackwater[38]
  – River Tud[39]
– River Tiffey[40]
– River Tas[41]

Eastern Wolds – all the Lincolnshire chalk-streams that flow into the Wash

River Witham – flows into The Wash (Lincolnshire)
– River Bain

Steeping River – flows into The Wash (Lincolnshire)
– River Lymn[42]

Eastern Wolds – all the Lincolnshire chalk-streams that flow into the North Sea

Willoughby High Drain – flows into The North Sea (Lincolnshire)
– Burland's Beck

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[33] chalk bedrock overlain with thick deposits of glacial till

[34] chalk bedrock overlain with thick deposits of glacial till

[35] chalk bedrock overlain with thick deposits of glacial till

[36] chalk bedrock at source overlain with thick deposits of glacial till

[37] chalk bedrock overlain with thick deposits of glacial till

[38] chalk bedrock overlain with thick deposits of glacial till

[39] chalk bedrock overlain with thick deposits of glacial till

[40] chalk bedrock overlain with thick deposits of glacial till

[41] chalk bedrock overlain with thick deposits of glacial till

[42] surrounded by chalk hills but flows over bedrock of mudstone, siltstone and sandstone

– Hog's Beck

Great Eau or Calceby Beck in headwaters – flows into The North Sea (Lincolnshire)
– Long Eau or The Beck in headwaters

River Lud[43] – flows into The North Sea via a system of dykes (Lincolnshire)
– Welton Beck
– Hallington Stream[44]

Waithe Beck – flows into The North Sea via a system of dykes (Lincolnshire)
–Thoresway Beck

Eastern Wolds – all the Lincolnshire chalk-streams that flow into the Humber

River Freshney – flows intoThe Humber (Lincolnshire)
–Laceby Beck[45]

Keelby Beck[46] – flows into into The Humber via a system of dykes (Lincolnshire)

Skitter Beck becomes East Halton Beck – flows into into The Humber (Lincolnshire)

Barrow Beck or Butforth Drain or The Beck – flows into into The Humber (Lincolnshire)

River Ancholme – flows into into The Humber (Lincolnshire)
– River Rase (Lincolnshire)
– Brimmer Back (Lincolnshire)
– Otby Beck (Lincolnshire)
– Nettleton Beck (Lincolnshire)

Eastern Wolds – all the Yorkshire chalk-streams that into the Humber

River Derwent – drains into the Humber (Yorkshire)
– *Sherburn Beck*
– East Beck[47] (Yorkshire)
– West Beck[48] (Yorkshire)
– Wintringham Beck[49] (Yorkshire)
– Blakey Beck[50] (Yorkshire)
– Settrington Beck[51] (Yorkshire)
– Whitestone Beck[52] (Yorkshire)
– *Menethorpe Beck*

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[43] rises at Tathwell

[44] apparently unnamed stream that flows past Hallington

[45] chalk bedrock overlain with glaciofluvial deposits of diamicton – unsorted sand and mud

[46] chalk bedrock overlain with glaciofluvial deposits of diamicton – unsorted sand and mud

[47] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[48] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[49] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[50] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[51] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[52] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

– Rowmire Beck becomes Mill Beck[53] (Yorkshire)
– Clombe Beck[54] (Yorkshire)
– Whitecarr Beck[55] (Yorkshire)
– Moor Beck[56] (Yorkshire)
– Leppington Beck[57] (Yorkshire)
– Bughtorpe Beck *becomes Skirpen Beck becomes Barlam Beck*[58] (Yorkshire)
– Salamanca Beck[59] (Yorkshire)
– Gilder Beck[60] (Yorkshire)
– *The Beck*
– *Blackfoss Beck*
– *Foss Beck*
– *Spittal Beck*
– Gowthorpe Beck[61] (Yorkshire)
– Bishop's Wilton Beck[62] (Yorkshire)
– *Bieby Beck*
– Pocklington Beck[63] (Yorkshire)
– Ridings Beck or Whitekeld Beck[64] (Yorkshire)
– Millington Beck[65] (Yorkshire)
– Hayton Beck[66] (or Burnby or Nunburnholme Beck) (Yorkshire)

Market Weighton Canal – drains into the Humber (Yorkshire)
– Goodmanham Beck[67] (Yorkshire)
– *River Foulness or Shipton Beck*
– East Beck[68] (Yorkshire)

Mire Beck – drains into the Humber (Yorkshire)
– Drewton Beck[69] (Yorkshire)

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[53] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

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[62] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[63] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[64] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[65] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[66] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[67] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[68] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[69] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

– Ings Beck[70] (Yorkshire)
– Church Beck[71] (Yorkshire)

River Hull – Drains into the Humber (Yorkshire)
– River Hull or West Beck
– Driffield Trout Stream
– Driffield Beck
– Elmswell Beck
– Little Driffield Beck
– The Beck
– Nafferton Beck
– Skerne Beck
– Kelk Beck becomes Foston Beck becomes Frodingham Beck

Eastern Wolds – all the Yorkshire chalk-streams that into The North Sea

The Gypsey Race

[70] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels

[71] rises at the foot of the chalk scarp flows over clays, silts, sands and gravels