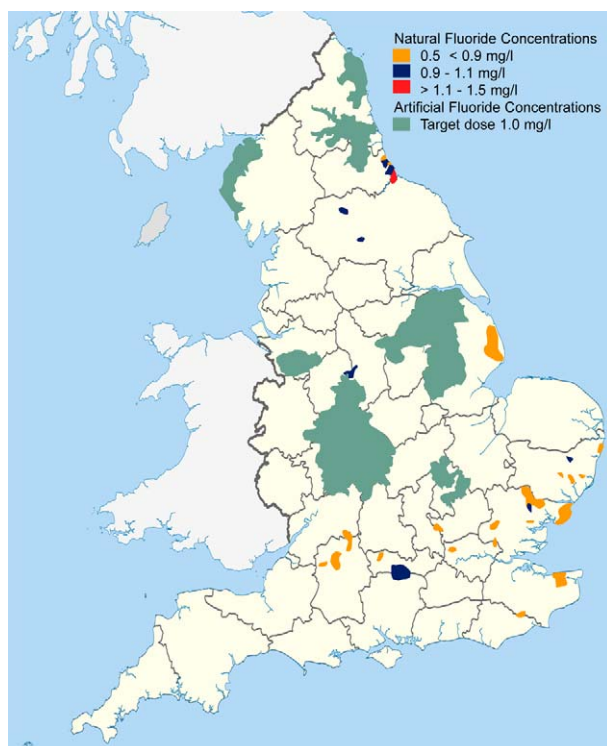


The extent of water fluoridation

1. Fluoridation in the UK

Fluoride concentrations in water supplies



Number of people supplied with artificially fluoridated water: 5,797,000

Number of people supplied with naturally fluoridated water: 330,000

Total (artificial and natural): 6,127,000

Percentage of population with optimally fluoridated water: 10%

Just over 6.1 million people in the UK receive water with a fluoride content, whether naturally occurring or added, that is sufficient to benefit oral health. This means that about 10% of the total population is supplied with optimally fluoridated water.

The number of people whose water supplies contain naturally occurring fluoride at the optimum level (around one part of fluoride per million parts of water) is estimated at around 330,000, including those living in Hartlepool and Easington in the north east of England, Uttoxeter in Staffordshire and parts of north Hampshire and south Berkshire. These areas are marked in dark blue and red on the map reproduced on this page.

Around 5.8 million people in different parts of England are supplied with artificially fluoridated water. In these communities, the naturally occurring fluoride is too low to protect teeth from decay and has therefore been supplemented at the water treatment works to bring it up to the 1 ppm concentration. These areas are marked in green on the map.

Parts of the country with fluoridation schemes include Cumbria, Cheshire, Tyneside, Northumbria, Durham, Humberside, Lincolnshire, Nottinghamshire, Derbyshire, the West Midlands and Bedfordshire. Full details of the extent of population coverage in these areas are given later in this section of *One in a Million*.

Some areas receive water with naturally occurring levels of fluoride that is below the optimum for oral health but can afford some degree of protection against tooth decay. However, in many instances the level of fluoride varies over time. For example, in some places it may range from as low as 0.1 ppm to as high as 0.9 ppm. The benefits are therefore not sustained.

Areas marked in yellow on the map – mainly in the east and south of England – are reported to have naturally occurring fluoride levels at between 0.5 ppm and 0.9 ppm.

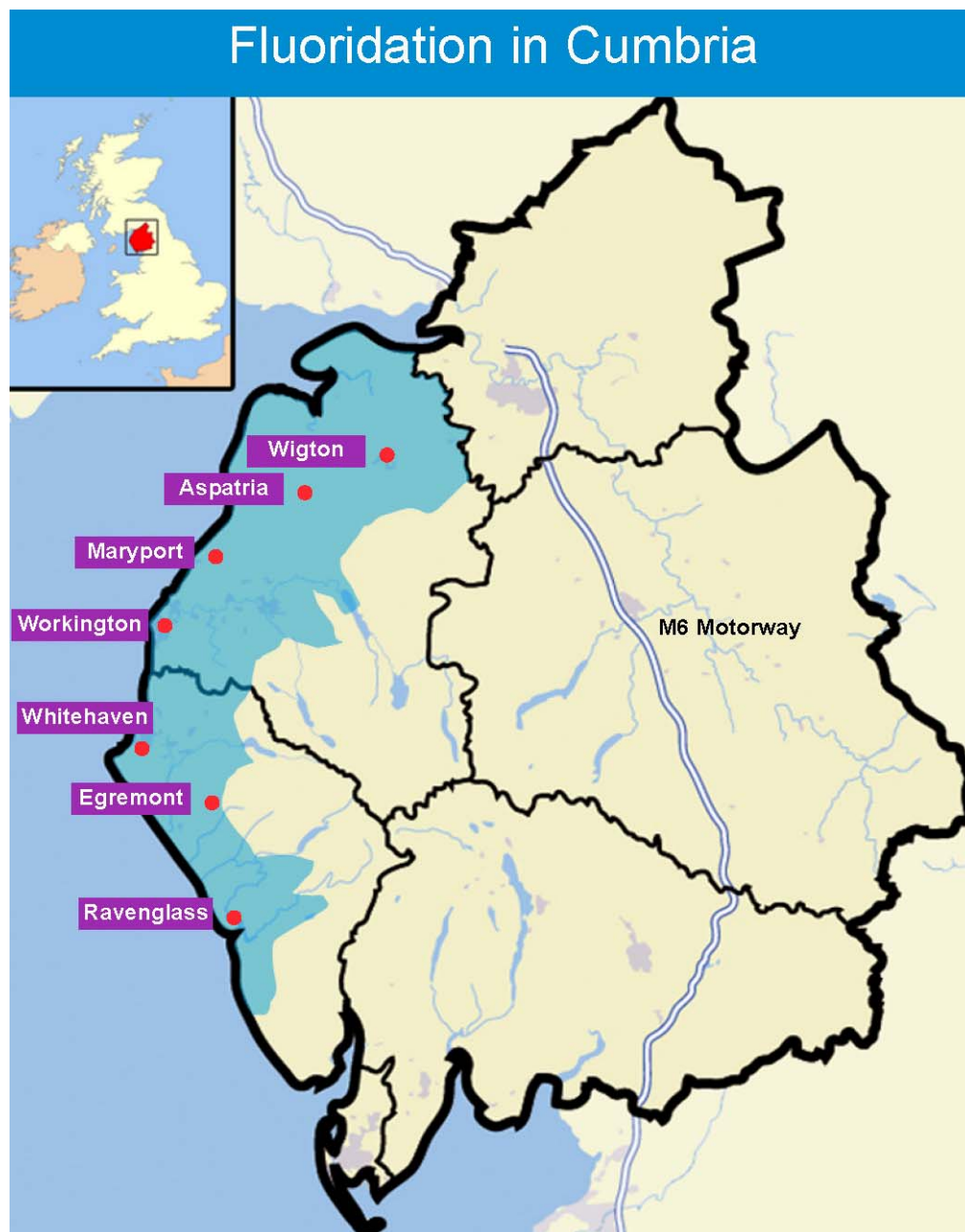
Local fluoridation maps

On pages 3 to 17, there are local maps indicating the geographical coverage of artificial water fluoridation schemes in particular parts of England. It should be borne in mind, however, that fluoridation mapping on small scale, surface-level maps may not always be entirely accurate.

Anyone wishing to find out whether their water supply is fluoridated - especially in rural areas of the country - should double-check with their water company, Strategic Health Authority or Primary Care Trust. Many water company websites contain a section on water quality in which the average fluoride level in samples of water taken from consumers' taps over the previous year is recorded by postcode.

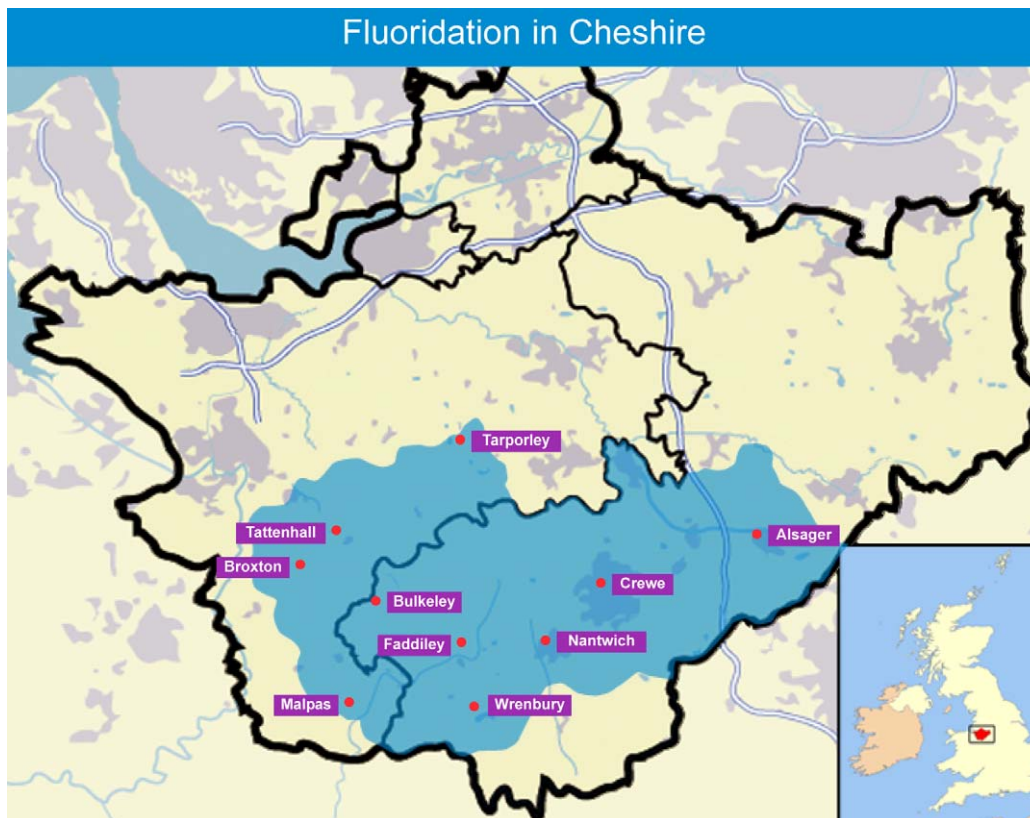
The British Fluoridation Society would like to hear from anyone who believes that there may be inaccuracies in any of the maps of fluoridation in the UK. It would be helpful if, in contacting the Society, you could cite the source of your information.

Cumbria



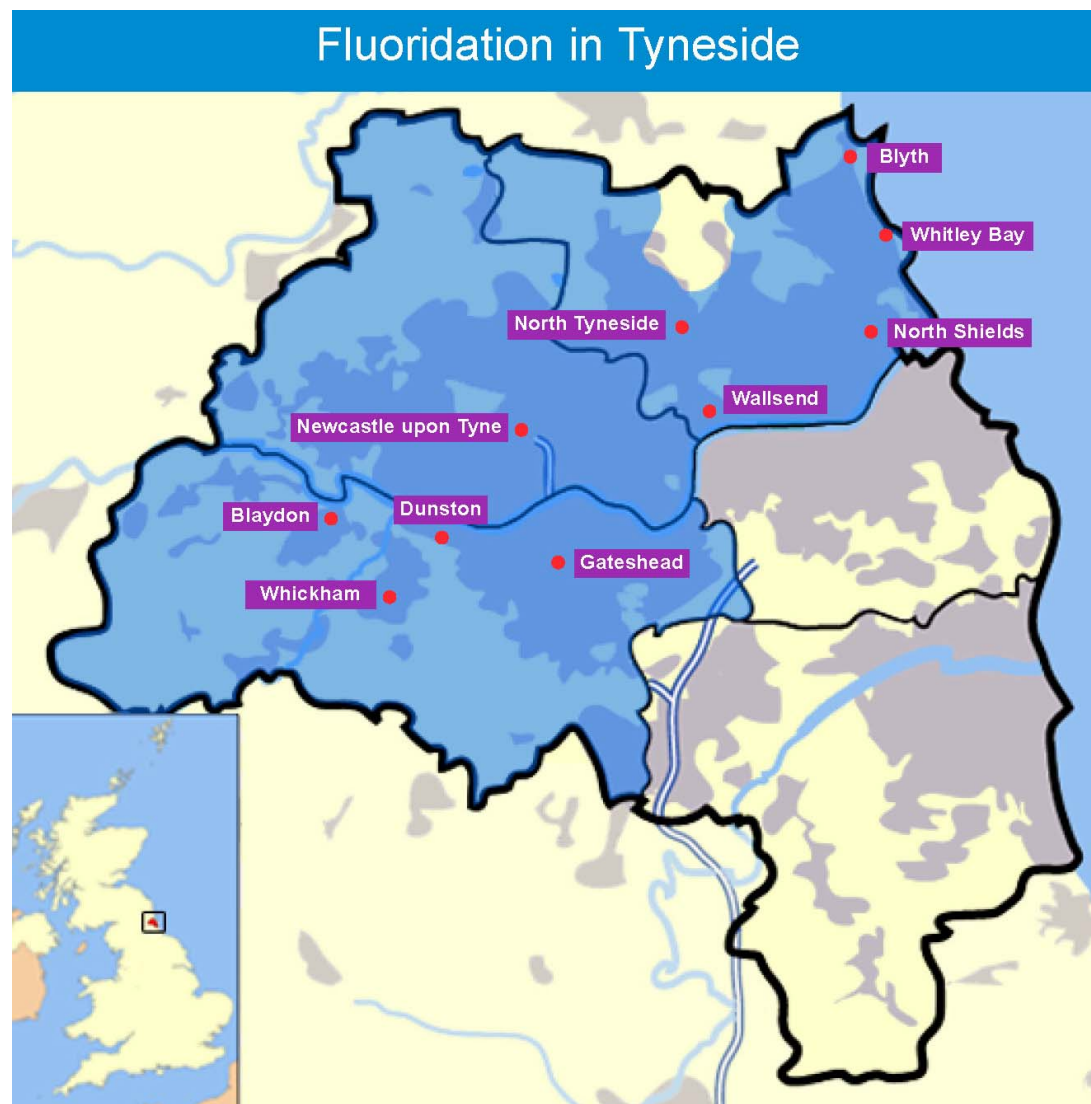
Around 120,000 people live in areas of west Cumbria covered by legal agreements for the supply of artificially fluoridated water. Communities covered by those agreements include Workington, Maryport, Aspatria, Wigton and Cockermouth in the Allerdale Borough Council area and the communities of Whitehaven, Egremont and Ravenglass in the Copeland Borough Council area. These fluoridation schemes were initiated in the period between 1969 and 1971. For technical reasons, the fluoridation plant at the Cornhow water treatment works serving areas in the north west of the county is reported not to have been in operation since 2006.

Cheshire



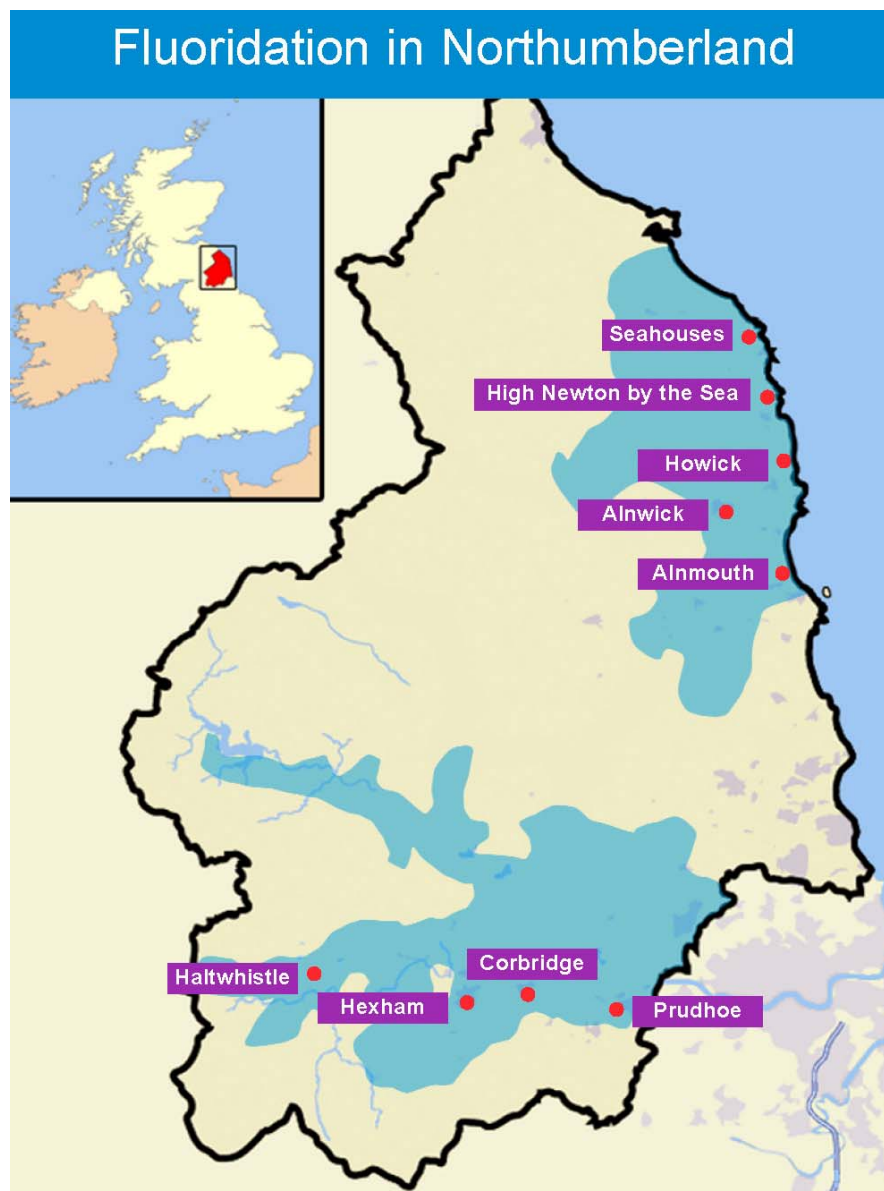
Around 137,000 people are supplied with artificially fluoridated water in Cheshire. Fluoridated communities include Crewe, Nantwich, Alsager, Bickerton, Bulkeley, Burland, Wrenbury, Egerton Green, Faddiley, Beeston, Broxton, Handley, Huxley, Malpas and Tarporley. The vast majority of the people benefiting from fluoridation in the county live in the Cheshire East Council area, with just a few thousand in neighbouring areas of Cheshire West Council. These fluoridation schemes were initiated in 1968.

Tyneside



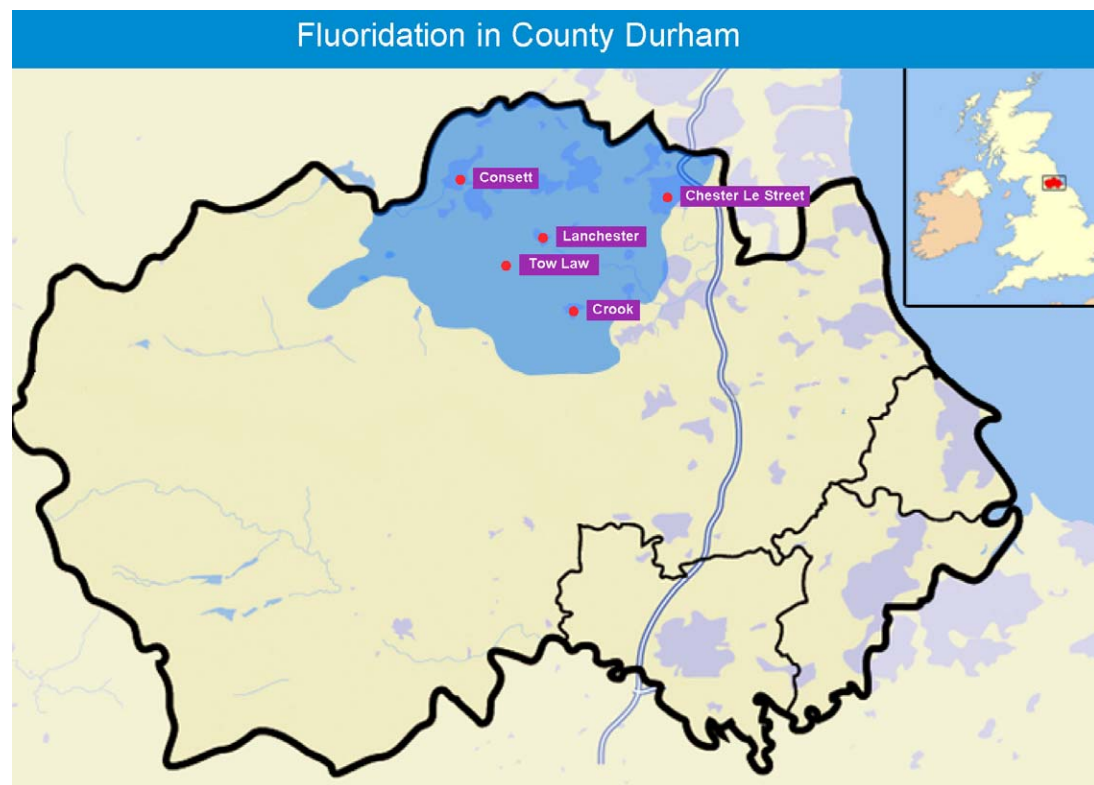
Around 643,000 people are supplied with artificially fluoridated water in and around Tyneside. Fluoridated communities include Newcastle upon Tyne, Gateshead, Wallsend, North Shields, Tynemouth and Whitley Bay. These fluoridation schemes were initiated in 1968.

Northumberland



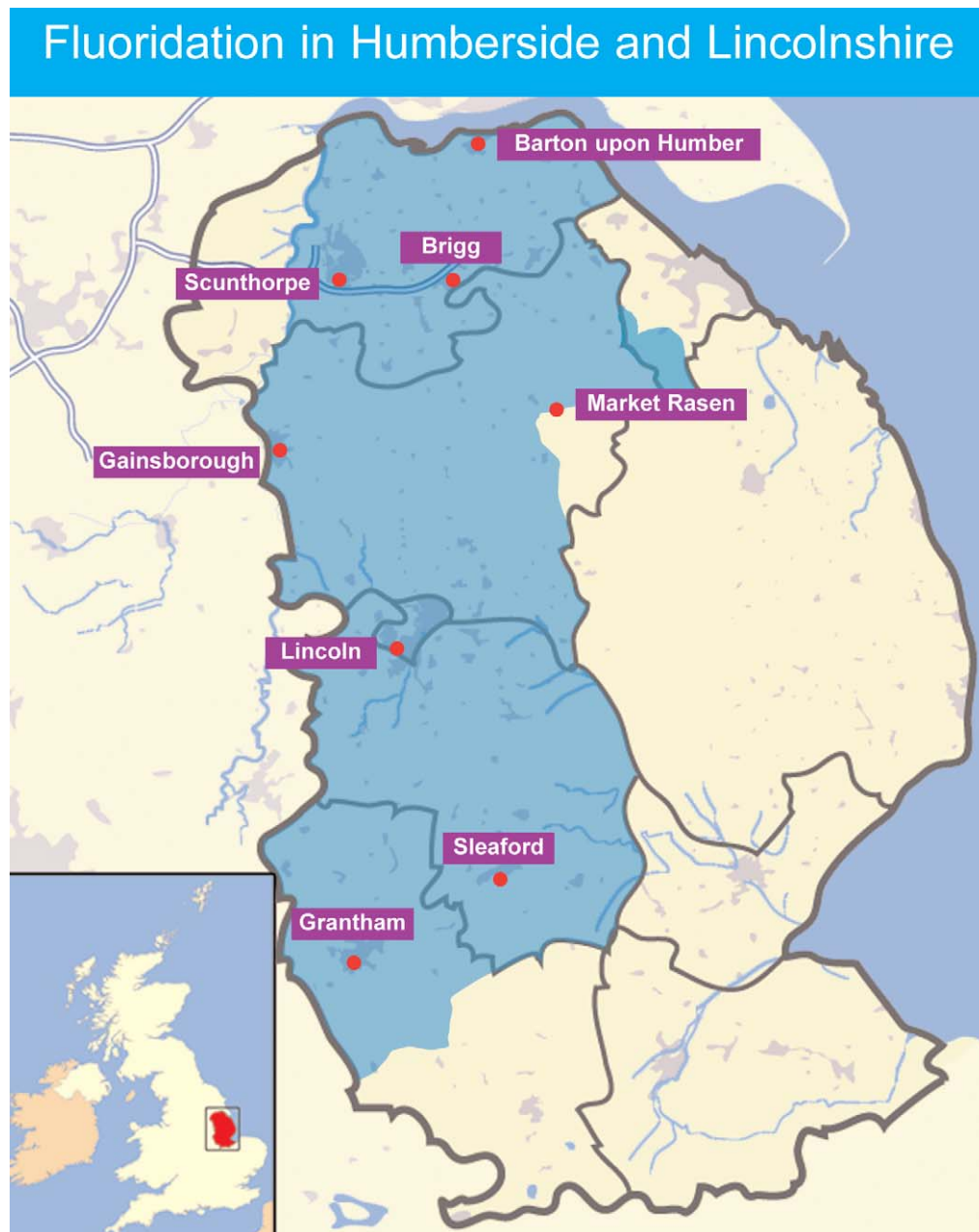
Around 101,000 people are supplied with artificially fluoridated water in Northumberland. In the east and north of the county, fluoridated communities include Alnwick, Alnmouth, Howick, Embleton, High Newton by the Sea and Seahouses. In areas of the county to the west of Newcastle upon Tyne, fluoridated communities include Haltwhistle, Henshaw, Haydon Bridge, Corbridge, Haddon on the Wall and Prudhoe. These fluoridation schemes were initiated in 1968.

Durham



Around 85,000 people are supplied with artificially fluoridated water in parts of County Durham to the south and south east of Newcastle upon Tyne. Fluoridated communities include Consett, Crook, Tow Law, Lanchester and parts of Chester le Street. These fluoridation schemes were initiated in 1968.

Humberside and Lincolnshire



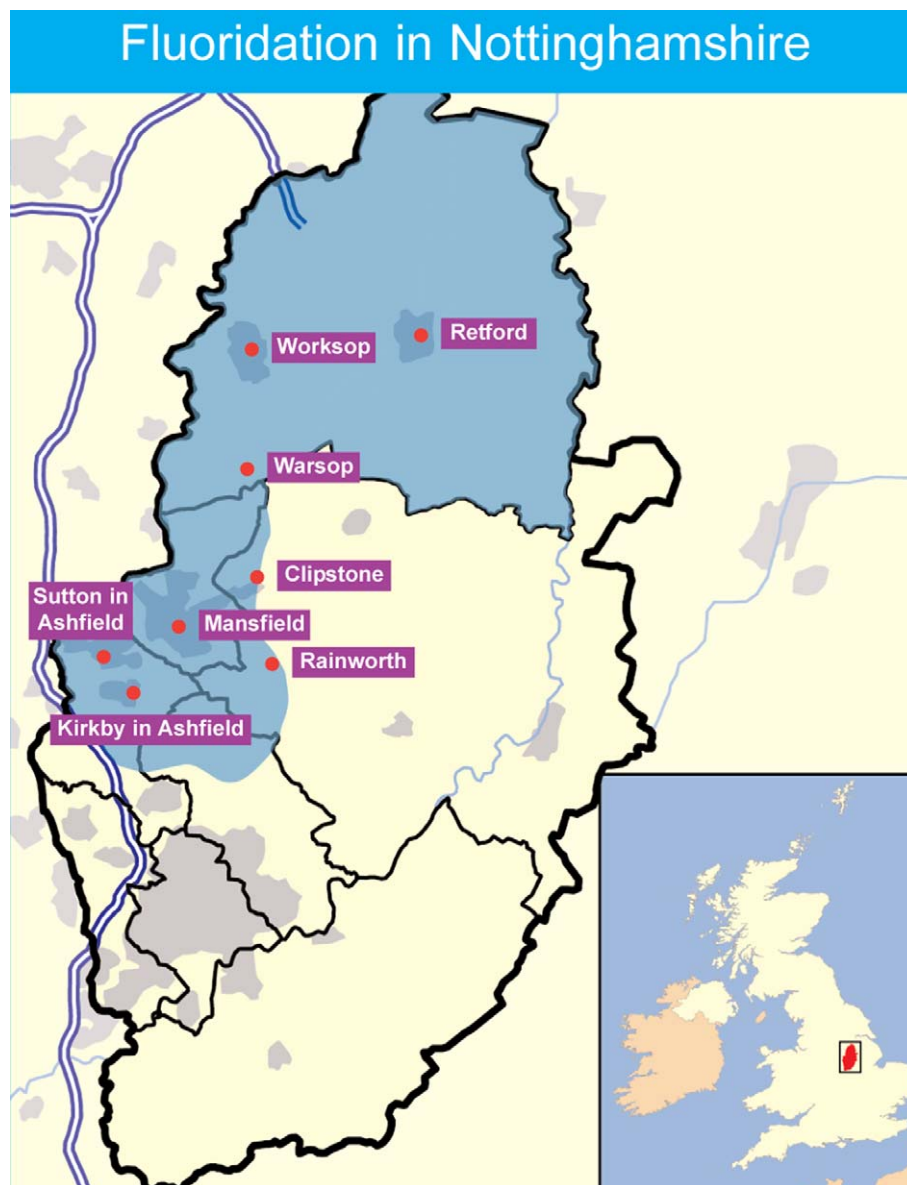
Humberside

Around 136,000 people are supplied with artificially fluoridated water in Humberside. Fluoridated communities include Scunthorpe, Barton upon Humber, Brigg and other places in the North Lincolnshire Council area that are located to the north and east of Scunthorpe. Some rural communities to the south west of Grimsby in the neighbouring North East Lincolnshire Council area are also fluoridated. These fluoridation schemes were initiated in 1968/69.

Lincolnshire

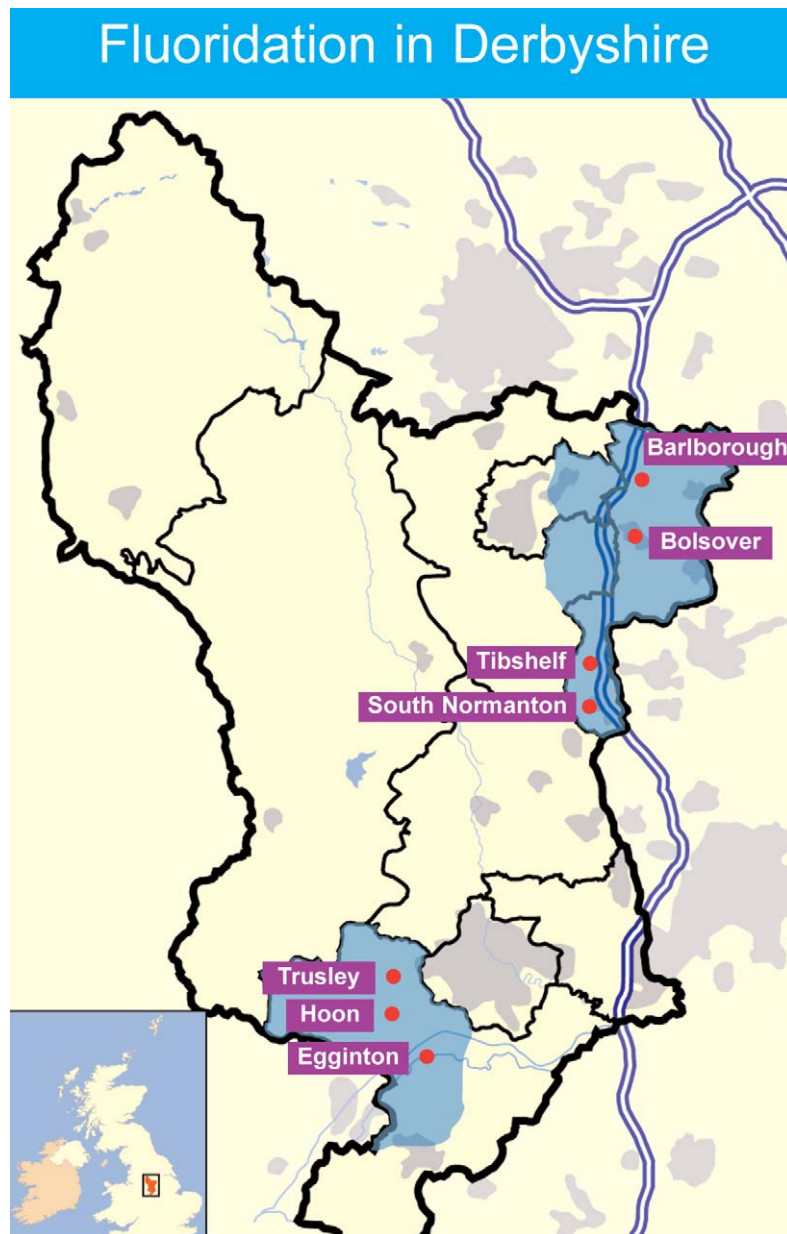
Around 250,000 people are supplied with artificially fluoridated water in Lincolnshire. Fluoridated communities include Lincoln, Gainsborough, Sleaford, Grantham, parts of Market Rasen and a large number of rural communities across the west and central areas of the county.

Nottinghamshire

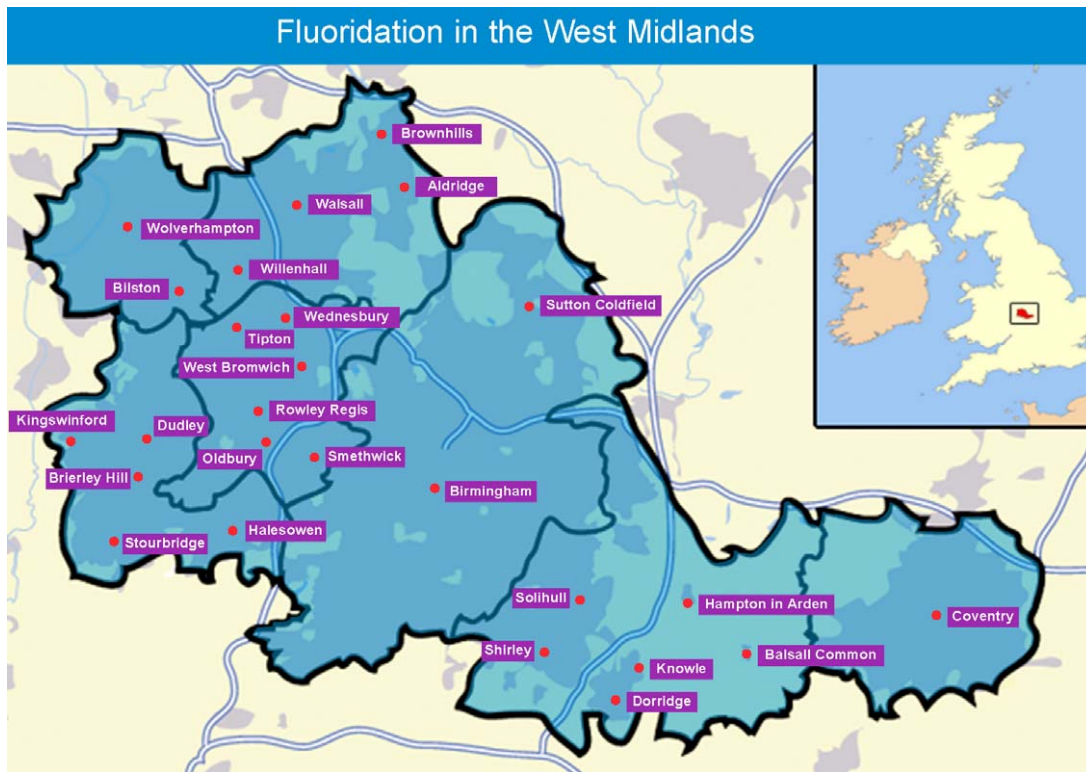


About 287,000 people are supplied with artificially fluoridated water in northern and western areas of Nottinghamshire. Fluoridated communities include Worksop, Retford, Mansfield, Sutton in Ashfield and Kirkby in Ashfield. These fluoridation schemes were initiated in the mid-1970s.

Derbyshire



About 43,000 people are supplied with artificially fluoridated water in Derbyshire. Fluoridated communities include parts of Bolsover District bordering Nottinghamshire, and parts of South Derbyshire District bordering Staffordshire.



Birmingham

Around 1 million people in Birmingham – the whole of the city’s population – are supplied with artificially fluoridated water. Birmingham’s first fluoridation scheme started in 1964, serving not only the city itself but also neighbouring parts of Solihull. In the mid-1980s a second scheme was introduced to serve the area of Sutton Coldfield, which became part of Birmingham in the local government reorganisation of 1974.

Solihull

Around 200,000 people in Solihull – the whole of the borough’s population – are supplied with artificially fluoridated water. Solihull’s first fluoridation scheme started in 1964 when Birmingham’s water was fluoridated. Further schemes were introduced in the early to mid-1980s to serve the south and east of the metropolitan borough that had been created in 1974, including Knowle, Dorridge, Meriden and Balsall Common.

Coventry

Around 300,000 people in Coventry – the whole of the city’s population – are supplied with artificially fluoridated water. Fluoridation schemes were introduced in stages between 1981 and 1989.

Sandwell

Around 300,000 people in Sandwell – the whole of the metropolitan borough's population – are supplied with artificially fluoridated water. Fluoridated communities include West Bromwich, Wednesbury, Tipton, Oldbury, Smethwick and Rowley Regis. The fluoridation scheme serving Sandwell was initiated in 1986.

Dudley

Around 305,000 people in Dudley – the whole of the metropolitan borough's population – are supplied with artificially fluoridated water. Fluoridated communities within the borough include Dudley itself, Halesowen, Stourbridge, Brierley Hill, Coseley, Cradley, Amblecote, Kingswinford, Sedgley and Wordsley. Fluoridation schemes were introduced between 1986 and 1988.

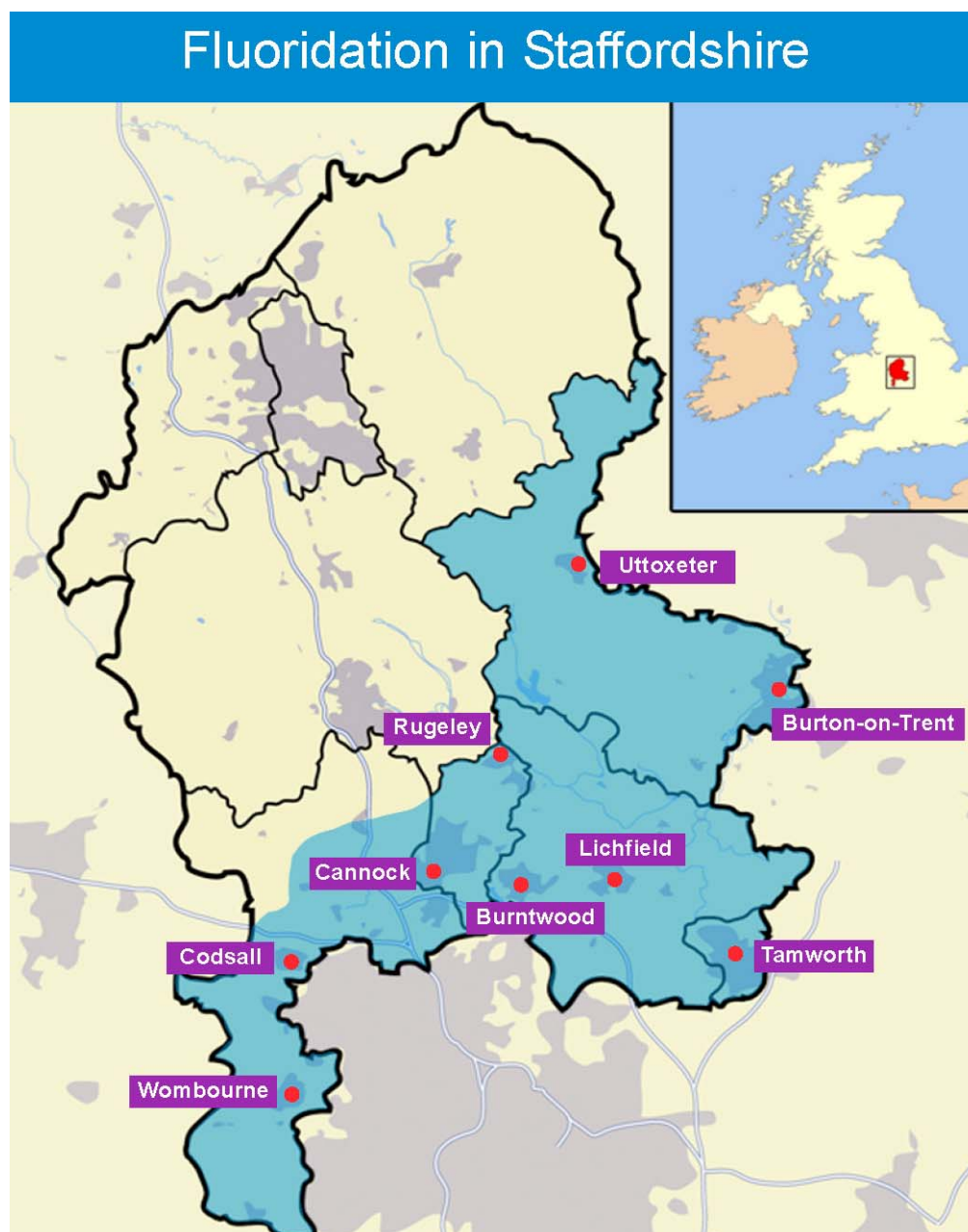
Walsall

Around 253,000 people in Walsall – the whole of the metropolitan borough's population – are supplied with artificially fluoridated water. Fluoridated communities within the borough include Walsall itself, Aldridge, Brownhills, Bloxwich and Willenhall. Fluoridation schemes were introduced between 1985 and 1987.

Wolverhampton

Around 236,000 people in Wolverhampton – the whole of the city's population – are supplied with artificially fluoridated water. Fluoridation of the local water distribution network commenced in 1986.

Staffordshire



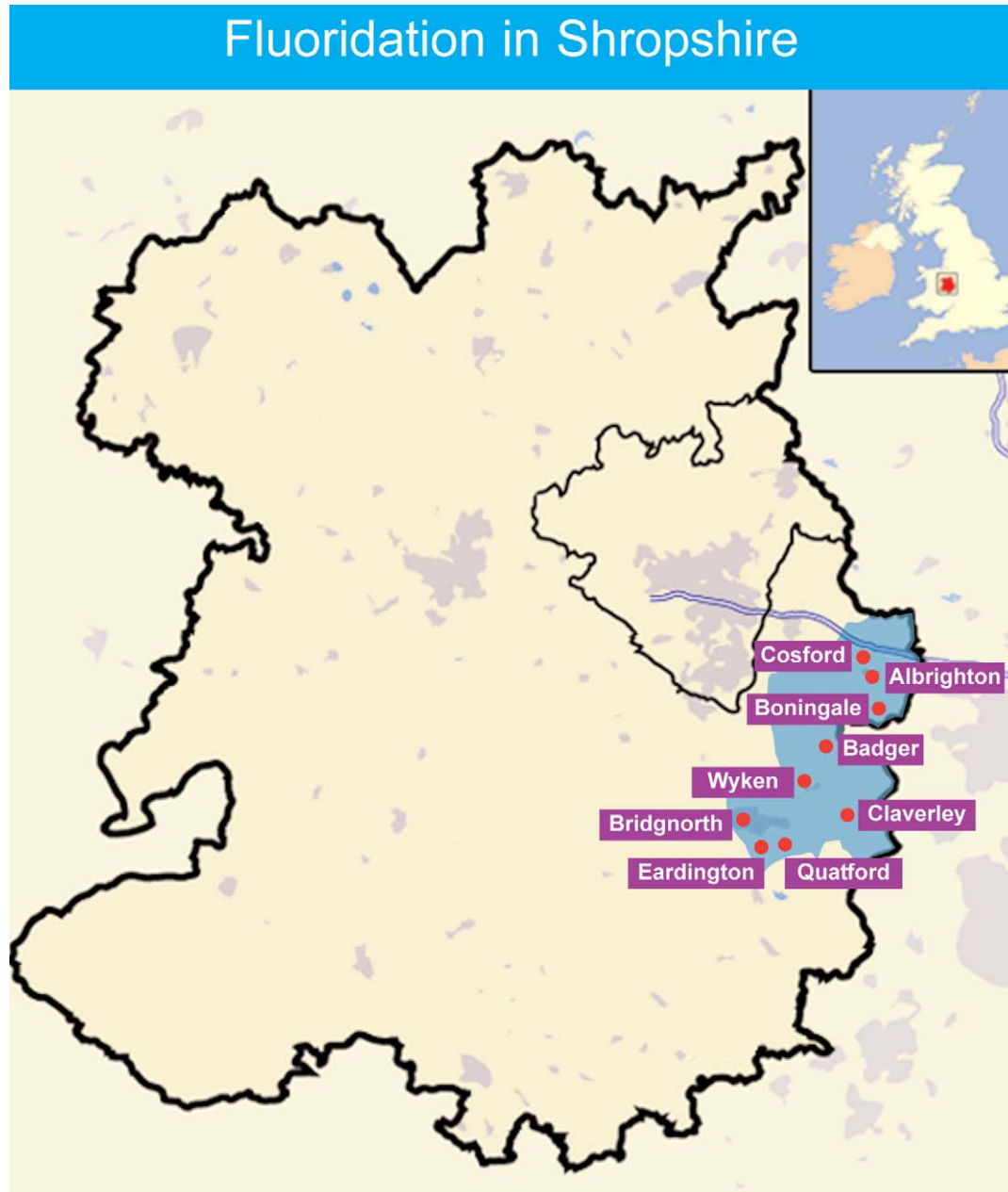
Around 497,000 people in the south and east of Staffordshire are supplied with fluoridated water, including the residents of Uttoxeter, which benefits from naturally fluoridated water at the optimum concentration. Fluoridated communities comprise:

- the whole of the Lichfield District Council area including Burntwood
- the whole Tamworth District
- the whole of Cannock Chase District, including Hednesford and Rugeley
- the whole of East Staffordshire District, including Burton on Trent, Barton under Needwood, Rocester, Yoxall and Uttoxeter

- large parts of South Staffordshire District, including Acton Trussell, Cheslyn Hay, Codsall, Great Wyrley, Penkridge, Seisdon and Wombourne.

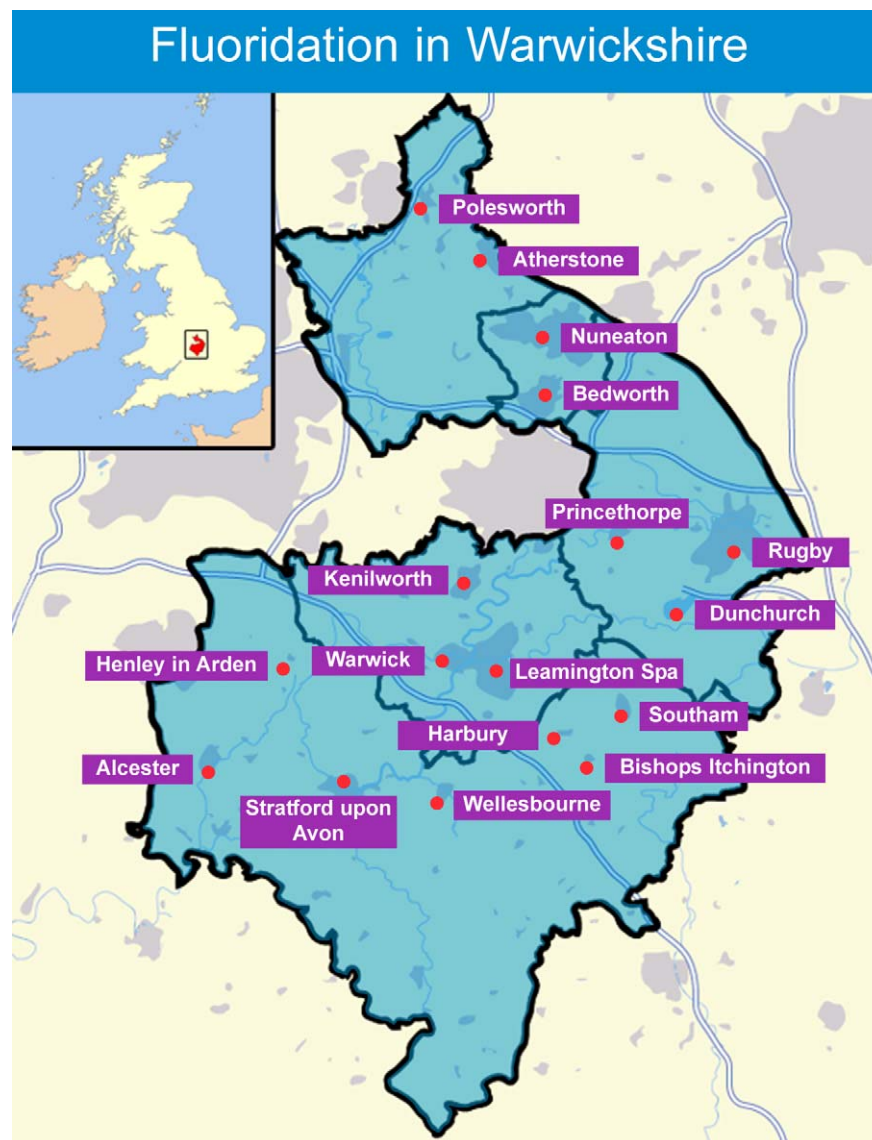
Fluoridation was introduced across these areas between 1986 and 1988.

Shropshire



Around 22,000 people in the south eastern corner of Shropshire bordering Wolverhampton and Staffordshire. Fluoridation was introduced in the area during the mid to late 1980s. Communities receiving fluoridated water include Bridgnorth, Eardington, Quatford, Claverley, Badger, Albrighton, Cosford and Boningale.

Warwickshire

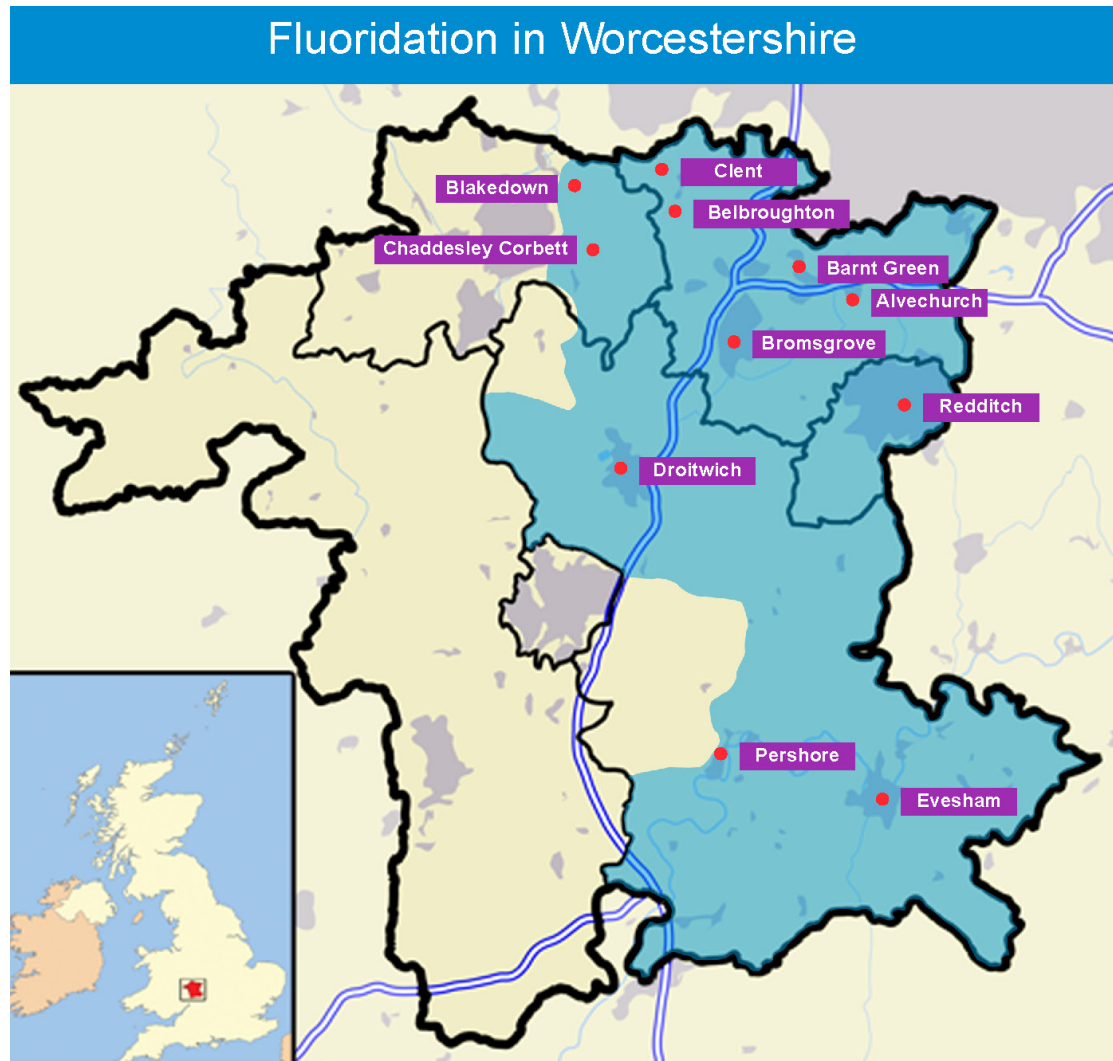


The whole of Warwickshire is covered by legal agreements for fluoridation schemes, including:

- the whole of Rugby District, including Rugby itself, Princethorpe, Dunchurch and Ryton on Dunsmore
- the whole of Nuneaton and Bedworth Borough
- the whole of North Warwickshire Borough, including Atherstone, Bulkington, Coleshill, Filongley, Over Whitacre and Polesworth
- the whole of Warwick District, including Warwick, Leamington Spa, Kenilworth and Stoneleigh
- the whole of Stratford on Avon District, including Stratford, Henley in Arden, Claverdon, Southam, Harbury, Bishops Itchington, Napton and Wellesbourne.

Fluoridation schemes in the county were introduced progressively between 1964 and 1987. Over recent years, the actual number of people supplied with artificially fluoridated water has been between around 431,000 and 507,000. The fluctuations in coverage have been for operational reasons, including modifications to plant.

Worcestershire

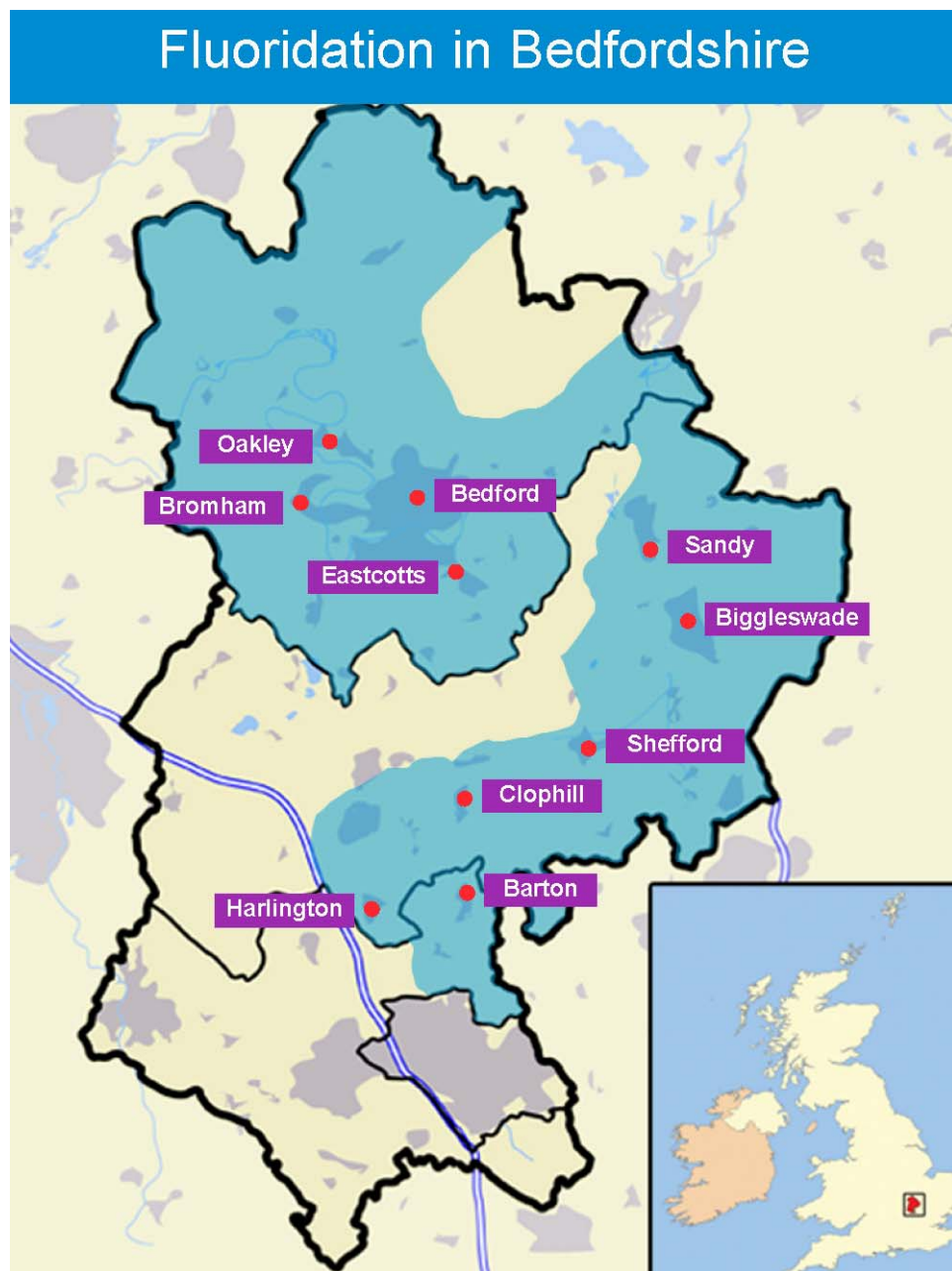


Around 253,000 people in Worcestershire are supplied with artificially fluoridated water. Fluoridated communities in the county comprise:

- Bromsgrove District, including Bromsgrove itself, Hagley, Belbroughton, Clent, Barnt Green, Alvechurch and Wythall
- Redditch District
- Wychavon District, including Droitwich, Evesham and some of the outskirts of Pershore
- Part of Wyre Forest District, including Blakedown and Chaddesley Corbett

Fluoridation schemes in the county were introduced between 1970 and 1991.

Bedfordshire



Around 198,000 people in Bedfordshire are supplied with artificially fluoridated water. Fluoridated communities comprise the town of Bedford, Biggleswade, Sandy and many rural areas in the north and east of the county.

continued

Summary: artificial water fluoridation in the UK

City or area	Population receiving artificially fluoridated water
Cumbria	120,000
Cheshire	137,000
Tyneside	643,000
Northumbria	101,000
County Durham	85,000
Humberside	136,000
Lincolnshire	250,000
Nottinghamshire	287,000
Derbyshire	43,000
Birmingham	1,000,000
Solihull	200,000
Coventry	300,000
Sandwell	300,000
Dudley	305,000
Walsall	253,000
Wolverhampton	236,000
Staffordshire	497,000
Shropshire	22,000
Warwickshire	431,000
Worcestershire	253,000
Bedfordshire	198,000
Total:	5,797,000

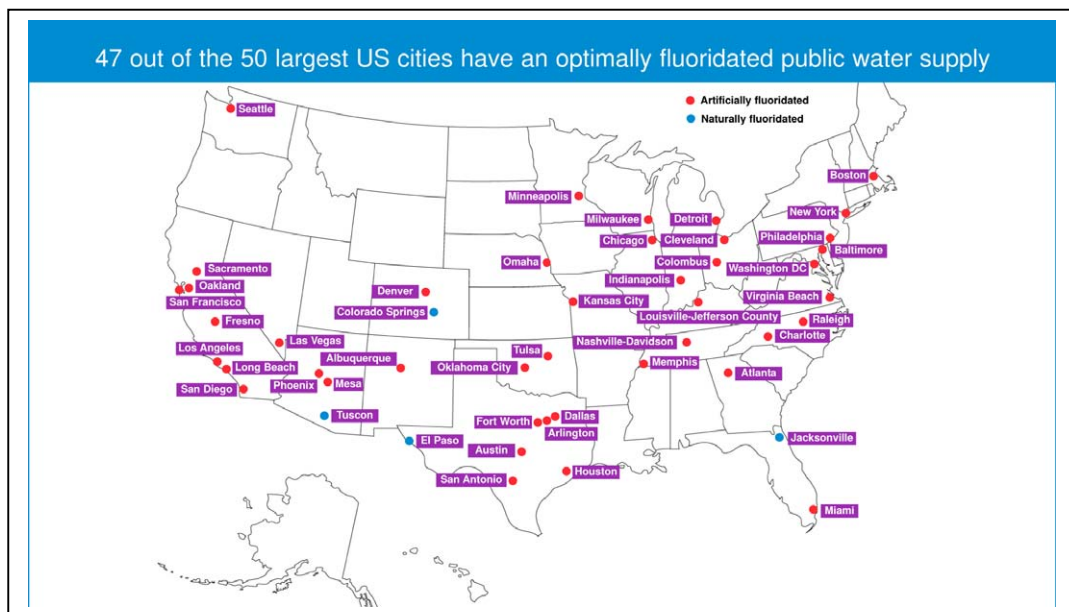
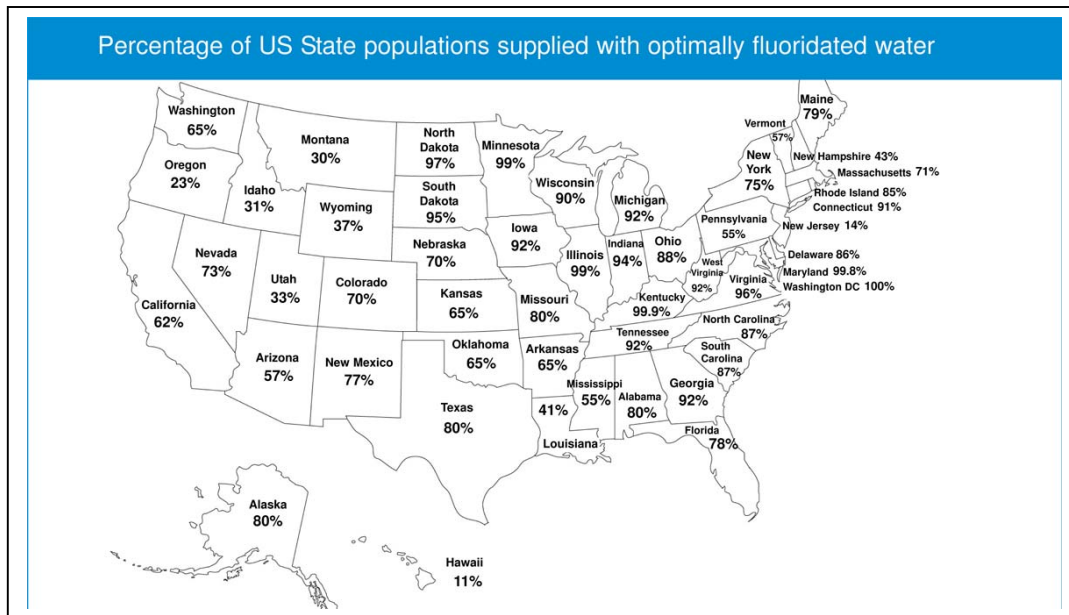
Summary: natural fluoridation coverage in the UK

Areas of the UK where people are supplied with naturally fluoridated water at or around the optimum level include:

Area	Estimated number of people receiving naturally fluoridated water
Hartlepool, County Durham	89,000
Easington, County Durham	47,000
Uttoxeter, Staffordshire	13,000
Redbridge, London Borough	180,000
Total	329,000

In addition, there are other parts of the country where people may variably receive fluoridated water at or near optimum levels. These numbers are difficult to estimate and, in any event, the populations concerned may often be receiving sub-optimal levels of fluoride in their water. Nevertheless, it is reasonable to assume that they derive some oral health benefit. These communities include Braintree, Colchester. Epping and Harlow in the south east of England.

2. Fluoridation in North America



The United States

Number of people supplied with artificially fluoridated water: 194,206,000

Number of people supplied with naturally fluoridated water: 10,078,000

Total (artificial and natural): 204,284,000

Percentage of population with optimally fluoridated water: 66%

People receiving optimally fluoridated water as a percentage of all those who are connected to public water supplies: 74%