

Appendix 1g: Population & Human Health

A1g.1.1 Introduction

Information is drawn from a variety of resources produced by the Office for National Statistics (<http://www.ons.gov.uk/ons/index.html>), the National Records of Scotland (<https://www.nrscotland.gov.uk/>) and the Northern Ireland Statistics and Research Agency (<http://www.nisra.gov.uk/>). Where available, information is presented at a Local Authority District and Unitary Authority scale. For each Regional Sea with coastal borders, summary information is presented for those administrative areas adjacent to the coast. The most recently available population data at such a scale are estimates for mid-2019, while statistics on the employment structure and health of the population are provided by the 2011 Census.

The most recent census of England, Wales and Northern Ireland was carried out in March 2021 and the results are due May 2022. As a result of the COVID-19 pandemic¹, Scotland's census will take place on 28th February².

A1g.1.2 UK context

A1g.1.2.1 Population

Table A1g.1 shows the mid-2019 population estimates and corresponding densities for the UK and its constituent countries and how the population has changed since 2014 (data used for OESEA3). Population density is highest in England; over 80% of the UK population reside there and the English population has also shown the greatest increase over the last 5 years. The population densities of Wales and Northern Ireland are comparably lower than that of the UK as a whole; the density in Scotland is the lowest by a considerable margin. Whilst the UK population continued to grow in mid-2019, it was at a slower rate (0.5%) than any year since mid-2004, primarily due to fewer births and lower net international migration³.

Figure A1g.1 shows the population density of UK administrative areas. General trends observed are lower densities in coastal areas around much of the south-west of England, west and north Wales, the far north of England, and much of Scotland excluding the central belt. The highest densities in coastal areas are around much of south-east England, part of north-east England, the Firths of Forth and Clyde, part of north-west England, south Wales and around the Severn Estuary. These areas are typically where conurbations are largest and most numerous, although more isolated areas of higher densities are dotted around much of the coast, most notably where conurbations are within smaller administrative boundaries.

¹ <https://www.ons.gov.uk/census/censustransformationprogramme/legislationandpolicy/conductofthe2021and2022censusesintheuk>

² <https://www.scotlandscensus.gov.uk/>

³ <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/mid2019estimates>

Figure A1g.1: Population density in the UK, 2019

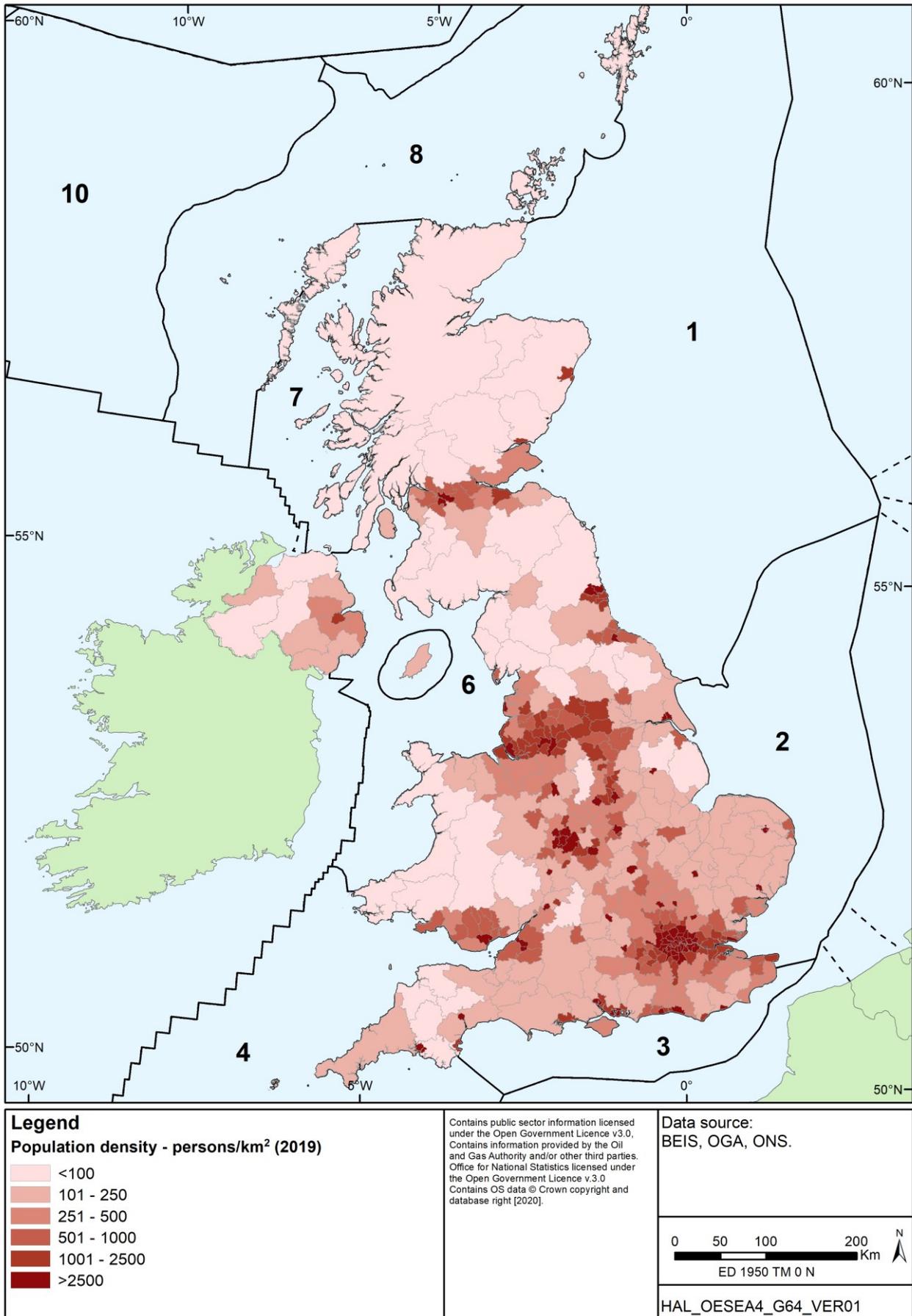


Table A1g.1: Mid-2019 population estimates and comparison with 2014

Area	Population (000s)	% change from 2014	Area (km ²)	Density (persons.km ⁻²)
England	56,287	+3.6%	130,311	432
Wales	3,152.9	+2.0%	20,736	152
Scotland	5,463.3	+2.2%	77,903	70
Northern Ireland	1,893.7	+2.9%	13,793	136
United Kingdom	66,796.8	+3.4%	242,743	275

Source: Office for National Statistics (2019a). Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2019, using April 2020 local authority district code. MYE5: Population estimates: Population density for local authorities in the UK, mid-2001 to mid-2019.

Table A1g.2 provides summary details of population estimates for the coastal administrative areas included in each Regional Sea. In general those Regional Seas in more southern parts of the UK (Regional Seas 2, 3 and 4) support higher population densities, with Regional Seas 2 and 3 above the UK average of 275 persons/km².

Table A1g.2: Population estimates and densities for coastal administrative areas, 2019

RS	Local Authorities ¹	Area (km ²)	Population (000s)	Density (persons/km ²) ²
1	Aberdeen City, Aberdeenshire, Angus, City of Edinburgh, Clackmannanshire, County Durham, Dundee City, East Lothian, East Riding of Yorkshire, Falkirk, Fife, Hartlepool, Highland, Moray, North Tyneside, Northumberland, Perth and Kinross, Redcar and Cleveland, Scarborough, Scottish Borders, Shetland Islands, South Tyneside, Sunderland, West Lothian	62,567	4,765	76
2	Babergh, Boston, Canterbury, Castle Point, Colchester, Dartford, Dover, East Lindsey, East Riding of Yorkshire, East Suffolk, Gravesham, Great Yarmouth, King's Lynn and West Norfolk, Kingston upon Hull, Maldon, Medway, North East Lincolnshire, North Lincolnshire, North Norfolk, Rochford, South Holland, Southend-on-Sea, Swale, Tendring, Thanet, Thurrock	13,746	3,952	287

RS	Local Authorities ¹	Area (km ²)	Population (000s)	Density (persons/km ²) ²
3	Adur, Arun, Bournemouth, Christchurch and Poole, Brighton and Hove, Chichester, Dorset, Dover, East Devon, Eastbourne, Eastleigh, Fareham, Folkestone and Hythe, Gosport, Hastings, Havant, Isle of Wight, Lewes, New Forest, Portsmouth, Rother, South Hams, Southampton, Teignbridge, Torbay, Wealden, Worthing	10,097	4,064	402
4	Bridgend, Bristol, Cardiff, Carmarthenshire, Cornwall, Forest of Dean, Isles of Scilly, Monmouthshire, Neath Port Talbot, Newport, North Devon, North Somerset, Pembrokeshire, Plymouth, Sedgemoor, Somerset West and Taunton, South Gloucestershire, South Hams, Stroud, Swansea, Torridge, Vale of Glamorgan	16,898	4,137	245
6	Allerdale, Antrim and Newtownabbey, Ards and North Down, Argyll and Bute, Barrow-in-Furness, Belfast, Blackpool, Carlisle, Causeway Coast and Glens, Ceredigion, Cheshire West and Chester, Conwy, Copeland, Denbighshire, Dumfries and Galloway, Flintshire, Fylde, Gwynedd, Halton, Inverclyde, Isle of Anglesey, Lancaster, Liverpool, Mid and East Antrim, Newry, Mourne and Down, North Ayrshire, Pembrokeshire, Renfrewshire, Sefton, South Ayrshire, South Lakeland, South Ribble, West Dunbartonshire, West Lancashire, Wirral, Wyre	38,998	5,425	139
7	Argyll and Bute, Causeway Coast and Glens, Highland, Na h-Eileanan Siar	38,248	493	13
8	Highland, Na h-Eileanan Siar, Orkney Islands, Shetland Island	31,740	308	10

Notes: ¹Digital vector boundaries for Local Authority Districts provided by ONS geography. ²Density calculated using rounded population figures. RS=Regional Sea.

Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency – Population Estimates, mid-2019.

A1g.1.2.2 Employment

Throughout the UK, the service sector dominates employment, followed by industry, then a small contribution from agriculture (Table A1g.3). Compared to England, Scotland and the UK as a whole, Wales and Northern Ireland show slightly higher proportions of employment in the agriculture and industrial sectors and lower proportions in the service sector. The number of

people in employment has shown the greatest relative increase in Wales and Northern Ireland (ca.15%) for the period between the 2011 census and June 2020. Over this period, decreased employment primarily in the industrial sector coincided with increased employment in the service sector.

Table A1g.3: Employment structure in June 2020 and comparison with 2011 census

Area	People in employment ¹ (000s)	Agriculture, forestry & fishing (%)	Industry ² (%)	Services ³ (%)
England	30,231 (25,163)	0.8 (0.8)	14.9 (18)	84.3 (81.2)
Wales	1,472 (1,364)	3.2 (1.7)	18.3 (20.7)	78.5 (77.6)
Scotland	2,786 (2,517)	1.5 (1.7)	15.4 (18.9)	83.1 (79.4)
Northern Ireland	916 (795)	4 (2.3)	17.9 (19.2)	78.1 (78.5)
United Kingdom	35, 412 (29,838)	1.0 (1.0)	15.3 (18.2)	83.7 (80.8)

Notes: Figures for 2011 shown in brackets. ¹Aged 16-74. ²Includes mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities; construction. ³Includes wholesale and retail trade; repair of motor vehicles and motor cycles; transport and storage; accommodation and food service activities; information and communication; financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support service activities; public administration and defence; compulsory social security; education; human health and social work activities, and other. Source: Table KS605UK - 2011 Census: Industry, local authorities in the United Kingdom. Office for National Statistics website, Office for National Statistic Nomis website - <https://www.nomisweb.co.uk/home/profiles.asp>

Table A1g.4 provides summary details of the employment structure for the coastal administrative areas included in each Regional Sea for 2018 (the latest for which data at this level was available). It should be noted that the local area data excludes farm-based agriculture as well as forestry and fishing. Querying the Annual Population Survey – workplace analysis through the Nomis webtool⁴ indicated that many estimates for local areas are not available. Where relevant we have referenced data from OESEA3 to indicate the potential scale of the agriculture, forestry and fishing sector in the Regional Sea descriptions in Section A1g.3 below. For most of the Regional Seas, the split of employment sectors was broadly similar to the UK.

Table A1g.4: Employment structure for coastal administrative areas, 2018

R S	Local Authorities	People in employment (000s)	Agriculture, forestry & fishing (%)	Industry (%)	Service s (%)
1	Aberdeen City, Aberdeenshire, Angus, City of Edinburgh, Clackmannanshire, County Durham, Dundee City, East	2,054	-	19.6	80.4

⁴ <https://www.nomisweb.co.uk/query/construct/submit.asp?menuopt=201&subcomp=>

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R S	Local Authorities	People in employment (000s)	Agriculture, forestry & fishing (%)	Industry (%)	Service s (%)
	Lothian, East Riding of Yorkshire, Falkirk, Fife, Hartlepool, Highland, Moray, North Tyneside, Northumberland, Perth and Kinross, Redcar and Cleveland, Scarborough, Scottish Borders, Shetland Islands, South Tyneside, Sunderland, West Lothian				
2	Babergh, Boston, Canterbury, Castle Point, Colchester, Dartford, Dover, East Lindsey, East Riding of Yorkshire, East Suffolk, Gravesham, Great Yarmouth, King's Lynn and West Norfolk, Kingston upon Hull, Maldon, Medway, North East Lincolnshire, North Lincolnshire, North Norfolk, Rochford, South Holland, Southend-on-Sea, Swale, Tendring, Thanet, Thurrock	1,429	-	18	82
3	Adur, Arun, Bournemouth, Christchurch and Poole, Brighton and Hove, Chichester, Dorset, Dover, East Devon, Eastbourne, Eastleigh, Fareham, Folkestone and Hythe, Gosport, Hastings, Havant, Isle of Wight, Lewes, New Forest, Portsmouth, Rother, South Hams, Southampton, Teignbridge, Torbay, Wealden, Worthing	1,589	-	14.2	85.8
4	Bridgend, Bristol, Cardiff, Carmarthenshire, Cornwall, Forest of Dean, Isles of Scilly, Monmouthshire, Neath Port Talbot, Newport, North Devon, North Somerset, Pembrokeshire, Plymouth, Sedgemoor, Somerset West and Taunton, South Gloucestershire,	1,802	-	16.8	83.2

RS	Local Authorities	People in employment (000s)	Agriculture, forestry & fishing (%)	Industry (%)	Services (%)
	South Hams, Stroud, Swansea, Torridge, Vale of Glamorgan				
6	Allerdale, Antrim and Newtownabbey, Ards and North Down, Argyll and Bute, Barrow-in-Furness, Belfast, Blackpool, Carlisle, Causeway Coast and Glens, Ceredigion, Cheshire West and Chester, Conwy, Copeland, Denbighshire, Dumfries and Galloway, Flintshire, Fylde, Gwynedd, Halton, Inverclyde, Isle of Anglesey, Lancaster, Liverpool, Mid and East Antrim, Newry, Mourne and Down, North Ayrshire, Pembrokeshire, Renfrewshire, Sefton, South Ayrshire, South Lakeland, South Ribble, West Dunbartonshire, West Lancashire, Wirral, Wyre	2,255	-	18.1	81.9
7	Argyll and Bute, Causeway Coast and Glens, Highland, Na h-Eileanan Siar	197	-	15.1	84.9
8	Highland, Na h-Eileanan Siar, Orkney Islands, Shetland Island	145	-	15.5	84.6

Source: <https://www.nomisweb.co.uk/reports/lmp/la/contents.aspx>, <https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/BRES19-FIGURE9.xlsx>

A1g.1.2.3 Health

Table A1g.5 shows selected health indicators for the UK and its constituent countries. Life expectancy was slightly above the UK average in England and typically slightly below in Wales and Northern Ireland. Scotland showed a notably lower life expectancy, some 2.2 and 1.8 years below the UK average for men and women respectively (Office for National Statistics 2019b). A comparison of life expectancy rates across the UK between 2001-2003 and 2016-2018 is provided in Figure Ag1.2. Life expectancies have increased significantly since 2001-2003 although the rate of increase has reduced since 2011 (Office for National Statistics 2019b). Healthy life expectancy rates for males and females are below the UK average in Wales, Scotland and Northern Ireland with England slightly above. Interestingly, although males in Scotland have the lowest life expectancy across the UK (77.1 years), the proportion of life spent in “good” health is higher at 80.3% than other countries of the UK.

Table A1g.5: Life expectancy and healthy life expectancy at birth, 2016-2018

Area	Life expectancy at birth ¹ (years)		Healthy life expectancy at birth ² (years)		Proportion of life spent in “Good” health ³ (%)	
	Male	Female	Male	Female	Male	Female
England	79.6	83.2	63.4	63.9	79.6	76.8
Wales	78.3	82.3	61.4	62	78.4	75.4
Scotland	77.1	81.1	61.9	62.2	80.3	76.7
Northern Ireland	78.7	82.4	61.7	61.8	78.5	75
United Kingdom	79.3	82.9	63.1	63.6	79.5	76.7

Notes: ¹Life expectancy at birth is the average number of years a person would live, if he or she experienced the particular area’s age-specific mortality rates throughout his or her life. ²Healthy life expectancy is an estimate of expected lifetime spent in “good” or “very good” health based on the proportion of individuals who perceived their general health to be one of those categories in the 2011 census. ³The proportion of life spent in good health is derived by comparing healthy life expectancy with life expectancy estimates.

Source: Office for National Statistics (2018). Health state life expectancy at birth and at age 65 by local areas, UK, <https://www.ons.gov.uk/datasets/life-expectancy-local-authority/editions/time-series/versions/1>

Figure A1g.2: Comparison of life expectancies between 2001-2003 and 2016-2018

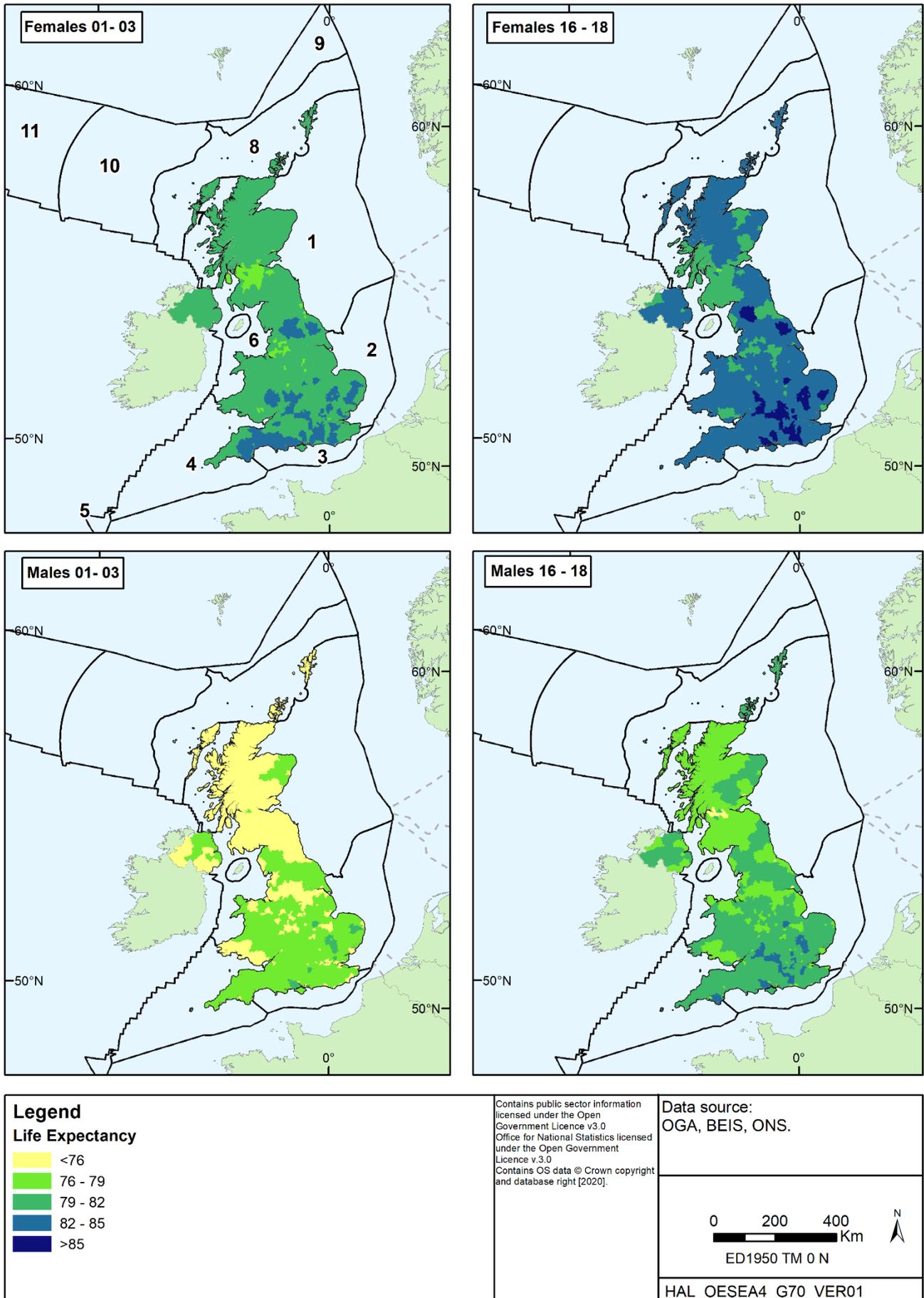


Table A1g.6 provides summary details of the life expectancy metrics for some of the coastal administrative areas included in each Regional Sea for 2016-2018. In general life expectancy and healthy life expectancy are similar to the UK average in most of the Regional Sea areas with Regional Sea 3 the only one where both metrics for males and females were above the UK average.

Table A1g.6: Life expectancy and healthy life expectancy for coastal administrative areas, 2016-2018

RS	Local Authorities	Life expectancy at birth (years)		Healthy life expectancy at birth (years)		Proportion spent in "Good" health (%)	
		Male	Female	Male	Female	Male	Female
1	Aberdeen City, Aberdeenshire, Angus, City of Edinburgh, Clackmannanshire, County Durham, Dundee City, East Lothian, East Riding of Yorkshire, Falkirk, Fife, Hartlepool, Highland, Moray, North Tyneside, North Yorkshire, Northumberland, Perth and Kinross, Redcar and Cleveland, Scottish Borders, Shetland Islands, South Tyneside, Sunderland, West Lothian	78.1	81.9	62.3	62.3	79.9	76.1
2	East Riding of Yorkshire, Essex, Kent, Kingston upon Hull- City of, Lincolnshire, Medway, Norfolk, North East Lincolnshire, North Lincolnshire, Southend-on-Sea, Suffolk, Thurrock	79.1	82.8	62.2	62.4	78.5	75.3
3	Bournemouth Christchurch and Poole, Brighton and Hove, Devon, Dorset, East Sussex, Hampshire, Isle of Wight, Kent, Portsmouth, Southampton, Torbay, West Sussex	79.8	83.4	63.7	64.4	79.9	77.1

RS	Local Authorities	Life expectancy at birth (years)		Healthy life expectancy at birth (years)		Proportion spent in "Good" health (%)	
		Male	Female	Male	Female	Male	Female
4	Bridgend / Pen-y-bont ar Ogwr, City of Bristol, Cardiff / Caerdydd, Carmarthenshire / Sir Gaerfyrddin, Cornwall, Devon, Gloucestershire, Monmouthshire / Sir Fynwy, Neath Port Talbot / Castell-nedd Port Talbot, Newport / Casnewydd, North Somerset, Pembrokeshire / Sir Benfro, Plymouth, Somerset, South Gloucestershire, Swansea / Abertawe, Vale of Glamorgan / Bro Morgannwg	79.1	83	62.9	63	79.5	75.9
6	Antrim and Newtownabbey, Ards and North Down, Argyll and Bute, Belfast, Blackpool, Causeway Coast and Glens, Ceredigion / Ceredigion, Cheshire West and Chester, Conwy / Conwy, Cumbria, Denbighshire / Sir Ddinbych, Dumfries and Galloway, Flintshire / Sir y Fflint, Gwynedd / Gwynedd, Halton, Inverclyde, Isle of Anglesey / Ynys Môn, Lancashire, Liverpool, Mid and East Antrim, Newry, Mourne and Down, North Ayrshire, Pembrokeshire / Sir Benfro, Renfrewshire, Sefton, South Ayrshire, West Dunbartonshire, Wirral	78	81.9	61.9	62.6	79.3	76.4
7	Argyll and Bute, Causeway Coast and Glens, Highland, Na h-Eileanan Siar	78.1	82.5	63.8	64.9	81.8	78.6
8	Highland, Na h-Eileanan Siar, Orkney Islands, Shetland Island	78.4	82.6	66.1	66.1	84.3	80

Note: Data was not available for some local authority areas.

Source: Life expectancy (LE), healthy life expectancy (HLE) and disability-free life expectancy (DFLE) at birth and age 65 by sex, UK, 2016 to 2018 - <https://www.ons.gov.uk/datasets/life-expectancy-local-authority/>

A1g.1.3 Features of Regional Sea areas

A1g.1.3.1 Regional Sea 1

1.3.1.1 Population

Regional Sea 1 incorporates the entire mainland east coast of Scotland, the east coast of Shetland and in the south, the English east coast to Flamborough Head. The total population of Local Authorities and Unitary Authorities along the coast of Regional Sea 1 is 4,765,000 with an overall density of 76 persons/km² (see Table A1g.4). Population density is typically very low in the north-east of Scotland (41 persons/km² in Aberdeenshire), and also low in north-east England between the border and the Blyth area (64 persons/km² in Northumberland). Areas of high population density in Scotland are focused around the cities of Aberdeen (1,232 persons/km²), Dundee (2,496 persons/km²) and Edinburgh (1,993 persons/km²). In north-east England, the more developed coastline of north and south Tyneside and Sunderland is the most densely populated (over 2,000 persons/km², see Figure A1g.1).

1.3.1.2 Employment

The employment structure shows a slightly smaller contribution from the service sector balanced by slightly larger contribution from the industrial sector in comparison to the UK as a whole (Table A1g.4). Whilst the local area data excluded the agriculture, forestry and fishing sector, the previous OESEA3 noted that this sector constituted just 1.7% in 2011.

Considerable variation is observed between individual areas, typically the service sector is generally more important in urban areas such as Dundee (87.6%) and Edinburgh (93.6%). Industry accounts for ca. 20% of employment with important centres in Aberdeenshire (28.2%), Moray (25%) and in the more densely populated region in north-east England (e.g. 26.7% in Sunderland).

1.3.1.3 Health

Life expectancy and healthy life expectancy were slightly below the UK average in Regional Sea 1 by approximately 1 year for both men and women. Values were typically lower around the more urban areas in north-east England, although the lowest life expectancy was for Dundee City which also had one of the lowest healthy life expectancies. The proportion of life spent in good health for the Regional Sea was similar to the UK average.

A1g.1.3.2 Regional Sea 2

1.3.2.1 Population

Regional Sea 2 incorporates stretches of coastline in England from East Riding of Yorkshire in the north to Dover, Kent, in the south. The total population of Local Authority Districts and Unitary Authorities along the English coast in Regional Sea 2 is 3,952,000 with an overall density of 287 persons/km² (Table A1g.2). Population density is typically lower in the north of the region (e.g. 142 persons/km² in East Riding of Yorkshire) than in the south (e.g. 375 persons/km² in Dover). Exceptions are the urban areas associated with Hull and Grimsby in the north (e.g. 3,629 persons/km² in Kingston-upon-Hull). The highest densities are generally in the administrative areas adjacent to the Thames estuary (e.g. 4,394 persons/km² in Southend-on-Sea, 1,438 persons/km² in Medway, 1,548 persons/km² in Dartford); the lowest densities occur between East Lindsey in Lincolnshire (80 persons/km²) and North Norfolk (109 persons/km²), including areas adjacent to The Wash.

1.3.2.2 Employment

As for Regional Sea 1, a slightly smaller contribution from the service sector was balanced by a slightly larger contribution from the industrial sector in comparison to the UK as a whole (Table A1g.4). The previous OESEA3 noted that agriculture, forestry and fishing sector constituted just 1.6% in 2011. Considerable variation is observed between individual areas. The service sector is more important in south-east England (e.g. 92.8% for Canterbury, 89.8% for Southend-on-Sea, 88.4% for Colchester in Essex). Industry is of varying importance throughout the region, with hotspots of industrial employment around the Humber (e.g. 31.7% for North Lincolnshire), South Holland in Lincolnshire (30.7%), Swale in Kent (23.8%) and Maldon in Essex (23%).

1.3.2.3 Health

Life expectancy for the Regional Sea was very similar to the UK average for both men and women although healthy life expectancy was about a year less than the UK average which meant the proportion of life spent in good health was slightly below the UK average. Life expectancy is typically slightly lower in the north (e.g. 77.6 and 82.2 years for males and females in North east Lincolnshire) and highest in the counties of Suffolk (e.g. 80.7 and 84.2 years for males and females) and Essex (e.g. 80.2 and 83.3 years for males and females). It should be noted that data was not available for many of the local authorities within the Regional Sea.

A1g.1.3.3 Regional Sea 3

1.3.3.1 Population

Regional Sea 3 incorporates stretches of coastline in England from Dover in the east to South Hams, Devon in the west. The total population of Local Authority Districts and Unitary Authorities along the coast in Regional Sea 3 is 4,064,000 with an average density of 402 persons/km² (Table A1g.2). Population density in the region is high, above that of both England and the UK as a whole (see Table A1g.1). Population density ranges between high in urban areas and moderate to low in more rural areas. The highest densities occur along the south coast including Portsmouth (5,321 persons/km²) and Southampton (5,062 persons/km²). The least densely populated areas include Dorset (152 persons/km²) and South Hams (98 persons/km²).

1.3.3.2 Employment

In the areas adjacent to Regional Sea 3 the employment sector split (Table A1g.4) is very similar to the UK as whole (Table A1g.3), with the industrial sector not as large as in Regional Seas 1 and 2. The New Forest (20.8%) in Hampshire shows the greatest contribution to the industrial sector. More densely populated areas such as Brighton and Hove (93.9%), Eastbourne (92.3%) and Southampton (92.9%), show the greatest contribution to the service sector. The previous OESEA3 noted that agriculture, forestry and fishing sector constituted just 0.9% in 2011.

1.3.3.3 Health

Life expectancy and healthy life expectancy were slightly above the UK average in Regional Sea 3 by about half a year for both men and women. Values were typically lower around more urban areas (e.g. 78.1 and 82.6 years for males and females in Southampton), than more rural areas (e.g. 81.2 and 84.4 for Hampshire). The proportion of life spent in good health for the population of the Regional Sea was slightly higher than the UK average. Again it should be noted that data was not available for many of the local authorities within the Regional Sea.

A1g.1.3.4 Regional Sea 4

1.3.4.1 Population

Regional Sea 4 incorporates a long length of coastline from South Hams, Devon on the south coast of England to Pembrokeshire in south-west Wales. The total population of Local Authority Districts and Unitary Authorities along the English and Welsh coasts in Regional Sea 4 is 4,137,000 with an overall density of 245 persons/km² (Table A1g.2). Population density in the region is generally low, below that of both England and the UK as a whole, although above that of Wales. South-west England is characterised by very low population densities (e.g. 69 persons/km² in Torridge, Devon), with Plymouth the highest density conurbation (3,282 persons/km²) on this part of the south coast. The inner Bristol Channel area sees higher population densities around Bristol and Cardiff (4,224 and 2,604 persons/km², respectively), with slightly higher densities along much of the south Wales coast as far as Swansea (654 persons/km²).

1.3.4.2 Employment

Employment structure (see Table A1g.4) is similar to the UK as a whole (Table A1g.3), although considerable variation is observed between individual areas. Contributions to the industrial sector are greatest in the south Wales areas of Neath Port Talbot (26.7%) and Bridgend (21.6%), while the service sector is most dominant in the Isles of Scilly (95.6%) and urban areas such as Bristol (90.5%), Swansea (89.9%) and Cardiff (89.4%). The previous OESEA3 noted that agriculture, forestry and fishing sector constituted just 1.6% in 2011.

1.3.4.3 Health

Life expectancy and healthy life expectancy were very similar to the UK average in Regional Sea 4. Both metrics were lowest in south Wales with Neath Port Talbot having a life expectancy of 76.7 and 81 for men and women and a healthy life expectancy of 59.1 and 59.5 years, respectively. Values were typically higher in south-west England (e.g. South Gloucestershire had a life expectancy of 81.2 and 84.5 years with a healthy life expectancy of 67.3 and 66.5 years).

A1g.1.3.5 Regional Sea 6

1.3.5.1 Population

Regional Sea 6 incorporates a long length of coastline from Pembrokeshire in south-west Wales to Argyll and Bute in south-west Scotland and much of the coast of Northern Ireland. While the majority of the coastline is rural in nature, there are also extensive urban areas present, most notably in north-west England.

The total population of Local Authority Districts and Unitary Authorities along the coast in Regional Sea 6 is 5,425,000 with an overall density of 139 persons/km². This is comparable to the overall population densities of Wales and Northern Ireland, but considerably lower than that for either England or the UK as a whole (Table A1g.1). Over large parts of the coastline the population density is generally low, particularly in Wales (e.g. 41 persons/km² in Ceredigion), the far north-west of England (e.g. 79 persons/km² in Allerdale), the north coast of Northern Ireland (73 persons/km² for Causeway Coast and Glens) and much of south-west Scotland (e.g. 23 persons/km² in Dumfries and Galloway). In contrast, the stretch of coast between Liverpool Bay and the Solway Firth is one of the most intensively developed in the UK, reflected by the high population densities over the majority of the coast from Blackpool (3,999 persons/km²) south to Liverpool (4,453 persons/km²). Densities are also elevated in areas adjacent to the Clyde in south-west Scotland (e.g. 685 persons/km² in Renfrewshire). In Northern Ireland, Belfast supports the highest population densities (2,495 persons/km²).

1.3.5.2 Employment

In the areas adjacent to Regional Sea 6, employment structure (Table A1g.4) is similar to Regional Seas 1 and 2 with slightly larger contributions from the industrial sector being compensated for by a slightly lower contribution from the service sector, compared to the UK average. The previous OESEA3 noted that agriculture, forestry and fishing sector constituted just 1.7% to this region in 2011.

Industry is very important along parts of the Cumbrian coast with some of the largest contributions to this sector in the UK, e.g. 44.2% and 35.7% in Copeland and Barrow-in-Furness respectively. The industrial sector is also of particular importance in Flintshire (35.8%) on the north Wales coast and parts of the Lancashire coast (South Ribble, 34.7% and Fylde, 31.6%). Areas with high dominance by the service sector include population centres such as Belfast (93.3%), Liverpool (92.6%), Blackpool (91.6%), Conwy (90.7%) and Sefton (90.2%).

1.3.5.3 Health

Life expectancy in Regional Sea 6 was below the UK average by approximately one year for both men and women, and below the averages for all of the countries within the UK with the exception of Scotland. Values were particularly low in south-west Scotland (e.g. 75.2 and 79.6 years for males and females in Inverclyde), Blackpool (74.5 and 79.5 years for males and females), Belfast (76.3 and 81.1 years for males and females), and Liverpool (76.3 and 80.1 years for males and females); life expectancy in the Inverclyde area is one of the lowest in the UK. These areas also had healthy life expectancies below both the Regional Sea and UK averages, with Blackpool having the lowest healthy life expectancy (53.3 and 57.1 years for males and females).

A1g.1.3.6 Regional Sea 7

1.3.6.1 Population

Regional Sea 7 features a highly indented and correspondingly long coastline from the north coast of Northern Ireland to Cape Wrath on the north-west mainland of Scotland. The total population of Local Authority Districts and Unitary Authorities along the coast in Regional Sea 7 is 493,000. These areas are some of the most sparsely populated in the UK, with an overall density of 13 persons/km² – considerably less than that of any of the countries within the UK (Table A1g.1). The highest densities occur on the north coast of Northern Ireland (e.g. 73 persons/km² for Causeway Coast and Glens); densities in Scotland are considerably lower (e.g. 9 persons/km² for Highland and Na h-Eileanan Siar, 12 persons/km² for Argyll and Bute).

1.3.6.2 Employment

In the areas adjacent to Regional Sea 7, OESEA3 noted that the employment structure differed to that of Northern Ireland, Scotland or the UK as a whole, through an elevated contribution (4.2%) to the agriculture sector (including forestry, and fishing). The exclusion of this sector from the local area data in Table A1g.4 means the employment structure of the area appears similar to that of Scotland and the UK (Table A1g.3).

1.3.6.3 Health

Life expectancy in Regional Sea 7 was below that of the UK but similar to that of Northern Ireland and above the average for Scotland. However healthy life expectancy (63.8 and 64.9 years for males and females) was higher than either the UK or any of its constituent countries with the proportion of life spent in good health being 81.8 and 78.6% for males and females respectively.

A1g.1.3.7 Regional Sea 8

1.3.7.1 Population

Regional Sea 8 incorporates the coastline to the west of the Outer Hebrides, the north coast of the Scottish mainland, Orkney and the west coast of Shetland. The total population of Local Authority Districts and Unitary Authorities along this coast is 308,000, although this figure is dominated by the Highland region (235,830) of which only a small amount lies within Regional Sea 8. The Regional Sea 8 area is one of the most sparsely populated in the UK, with an overall density of 10 persons/km² (Table A1g.2) – considerably less than that of Scotland or the UK as a whole (Table A1g.1). Population densities are slightly higher on Orkney and Shetland (22 and 16 persons/km² respectively) than the Highland or Eilean Siar (both 9 persons/km²).

1.3.7.2 Employment

Similar to Regional Sea 7, OESEA3 noted an elevated contribution (4.6%) of the agriculture sector (including forestry, and fishing) in 2011 which is excluded from the local area data in Table A1g.4. The importance of the agriculture sector (including forestry and fishing) is most apparent in the Orkney Islands, where in 2018 almost 16% of employment is in the agriculture sector (including forestry and fishing) (HIE 2019).

1.3.7.3 Health

Life expectancy in Regional Sea 8 was below that of the UK but similar to that of Northern Ireland and above the average for Scotland. However healthy life expectancy was the highest (66.1 years for males and females) of all the Regional Seas as well as the UK and its constituent countries, with the proportion of life spent in good health being 84.3 and 80% for males and females respectively.

A1g.1.4 Evolution of the baseline

Table A1.g.7 provides details of how the population of the UK and constituent countries may change over the next 25 years. Based on the latest population estimates for mid-2018 (see Section A1g.2.1), the UK population is projected to increase by 3.4 million to 69.8 million by mid-2030 and reach 71.8 million by mid-2040. Population growth to 2040 is predicted to be smallest in Scotland (2.5%), Wales (3.5%) and Northern Ireland (5.4%), with growth in England (9.3%) slightly above the UK as a whole (8.1%).

Table A1g.7: Estimated and projected populations of the UK and constituent countries, 2018-2040

Area	Mid-2018 estimate (000s)	Projected population (000s)	
		2030	2040
England	55,977	59,182	61,158
Wales	3,139	3,231	3,252
Scotland	5,438	5,550	5,575
Northern Ireland	1,882	1,959	1,983
United Kingdom	66,436	69,844	71,837

Source: Office for National Statistics (2019c). National population projections:

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/2014basednationalpopulationprojectionstableofcontents>

A1g.1.5 Environmental issues

A1g.1.5.1 Deprivation

Indices of deprivation identify areas of multiple deprivation at the small area level. Separate indices have been constructed for England, Northern Ireland, Scotland and Wales and although not directly comparable, each index is based on the concept that distinct dimensions of deprivation such as income, employment, education and health can be identified and measured separately (see Table A1g.8). These dimensions, sometimes referred to as 'domains' are made up of a series of summary statistics or indicators which are then aggregated and weighted⁵ to provide an overall measure of multiple deprivation with each individual area allocated a deprivation rank and score. Table A1g.8 provides details of the key components and differences between the most recent indices. For each index, the areas which have the highest rank of 1 are those areas which are considered most deprived. Figure A1g.3 highlights the patterns of deprivation according to each index.

From Figure A1g.3, each country supports relevant coastal areas which are amongst the 20% most deprived. For example, in Scotland small isolated areas are present on the east coast and around the Firth of Forth. In England, some of the most deprived areas are clustered in the north-east and north-west with more isolated areas located along the rest of coast. There are also deprived areas clustered along eastern parts of the south and north coasts of Wales and in and around Belfast in Northern Ireland.

⁵ The weights are selected according to a number of criteria which are used to assess the level of importance attached to each domain theme in the overall measurement of deprivation. As each index uses different indicators and domains, the weights applied to aggregate domain scores are different although there are similarities. For example, for each of the countries income and employment are domains which are given the highest weighting of between 22 (Wales) and 28% (Scotland).

Figure A1g.3: Indices of multiple deprivation (rank) for constituent countries of the UK

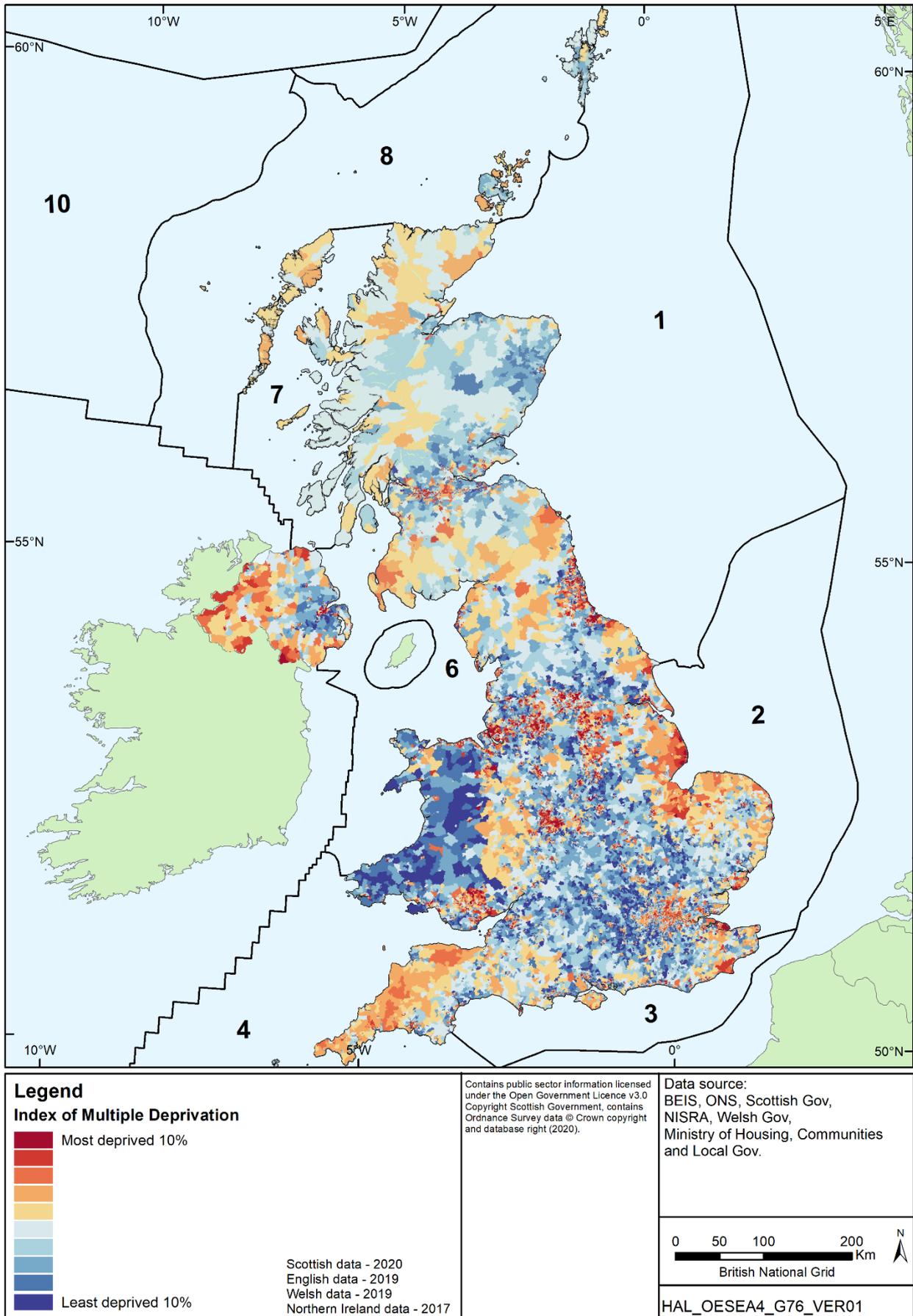


Table A1g.8: Key components and differences between the four current indices of deprivation

Most recent Index of Deprivation	Year on which data based	No. of domains	No. of indicators	Small area geography	Average population size	Rank of Deprivation (1 = most deprived)
England (2019) ¹	2019	7	39	Lower layer super output areas	1,500	1 to 32,844
Wales (2019) ²	2019	8	47	Lower layer super output areas	1,600	1 to 1,909
Scotland (2020) ³	2020	7	38	Data zones	700-800	1 to 6,976
Northern Ireland (2017) ⁴	2017	7	38	Super output areas	2,100	1 to 890

Sources:

¹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/835115/loD2019_Statistical_Release.pdf

²<https://gov.wales/sites/default/files/statistics-and-research/2019-11/welsh-index-multiple-deprivation-2019-results-report-024.pdf>

³<https://www.gov.scot/collections/scottish-index-of-multiple-deprivation-2020/>

⁴<https://www.nisra.gov.uk/statistics/deprivation/northern-ireland-multiple-deprivation-measure-2017-nimdm2017>

A1g.1.5.2 Air pollution

Air pollution has a significant effect on public health, and poor air quality is the largest environmental risk to public health in the UK (Bradley *et al.* 2019). Costs to society are estimated at more than 20 billion pounds every year (Royal College of Physicians 2016). Long-term exposure to air pollution (over several years) reduces life expectancy, mainly due to cardiovascular and respiratory causes and from lung cancer. The annual mortality burden of human-made air pollution in the UK is roughly equivalent to between 28,000 and 36,000 deaths (COMEAP 2009). Short-term exposure (over hours or days) to elevated levels of air pollution can cause a range of effects including exacerbation of asthma, effects on lung function, increases in respiratory and cardiovascular hospital admissions and mortality (Bradley *et al.* 2019).

Sources of pollutants (such as traffic) tend to emit a range of different pollutants making it difficult to disentangle the effects of individual pollutants. Whilst there is good evidence that PM_{2.5} plays an important causal role in shortening life, linking PM_{2.5} concentrations with an increased risk of death likely reflects the effect of both PM_{2.5} and also, to some extent, other pollutants such as other size fractions of PM, nitrogen dioxide (NO₂) and other components of the air pollution mixture (COMEAP 2018).

The fraction of mortality attributable to long-term exposure to particulate air pollution is included in the Public Health Outcomes Framework (PHOF) for local authorities in England⁶. Based on the levels of pollution in 2018, figures for the PHOF indicator vary from less than 3% in some rural areas, to 7% or more in some London Boroughs, with the fraction of mortality attributable to long-term exposure to particulate air pollution in England being 5.2% (Figure A1g.4, Gowers *et al.* 2020). OESEA3 presented equivalent 2010 estimates for other parts of the UK which ranged from around 2.5% in some local authorities in rural areas of Scotland (e.g. Eilean Siar, Argyll and Bute) and Northern Ireland (e.g. Causeway Coast and Glens), between 3% (e.g. Gwynedd) and 5% (e.g. Cardiff) in Wales (Gowers *et al.* 2014). The similarity of the 2010 figure for England (5.3%) to the 2018 figure suggests that the estimates for other parts of the UK are likely to remain valid. Further information is presented in Appendix 1e Air Quality.

A1g.1.5.3 Water quality

Bathing waters are quality classified according to two microbiological parameters (*Escherichia coli* and intestinal enterococci) defined by the Bathing Water Directive 76/160/EEC and implemented through the Bathing Water Regulations 2013 (England and Wales), the Bathing Waters (Scotland) Regulations 2008 and the Quality of Bathing Water Regulations (Northern Ireland) 2008. In 2019, 97% of UK reported coastal bathing waters were in line with the minimum quality standards of the Directive being classified as 'sufficient' or better. Fifteen bathing waters were classified 'poor' (Figure Ag1.5, EEA 2020). Since 2016, there have been fairly minor variations in the reported quality of UK bathing waters which tend to be related to weather conditions, as combined sewer overflows operate more frequently during wet weather, diffuse pollution from urban and agricultural sources is increased, and in poor summers there is less sunlight to kill off bacteria in water. Further information on other water quality issues including marine plastic pollution are described in Appendix 1d Water Environment.

A1g.1.5.4 Coastal erosion and flooding

A large proportion of the UK coastline is suffering from erosion (*ca.* 17% in the UK) with England (*ca.* 30%) and Wales (*ca.* 23%) having the greatest proportion of eroding coast. The coastline of England is also the most protected with *ca.* 46% of its length lined with coastal defence works (seawalls, groins) or fronted by artificial beaches. In England, the proportion of eroding coast was greatest in the Yorkshire and Humber region (56% with 43% of the coast protected), with the south-east (31% with 54% protected), south-west (32% with 22% protected) and east (30% with 69% protected) of England regions also having large proportions of eroding coastline (Masselink & Russell 2013), with management of erosion and flood risk being delivered through Shoreline Management Plans (SMPs) and Flood Risk Management Strategies. Further information is provided in Appendix 1b Geology, Substrates & Coastal Processes.

⁶ https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/8/gid/1000043/pat/6/par/E12000004/ati/302/are/E06000015/iid/30101/age/230/sex/4/cid/4/page-options/ovw-do-0_eng-vo-0_eng-do-0_map-ao-4

Figure A1g.4: Proportion of mortality attributable to long-term exposure to particulate air pollution by Local Authority area in England

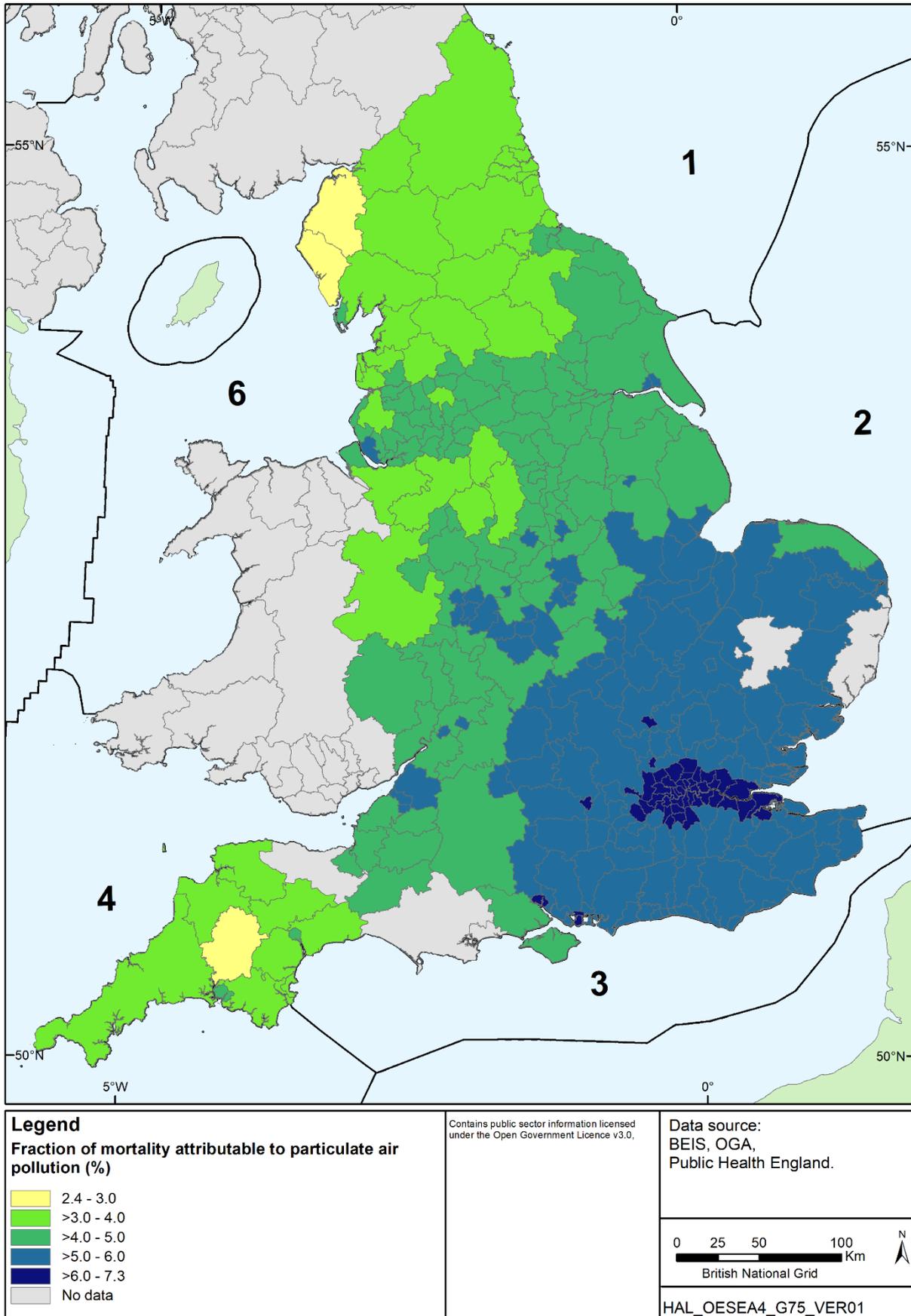
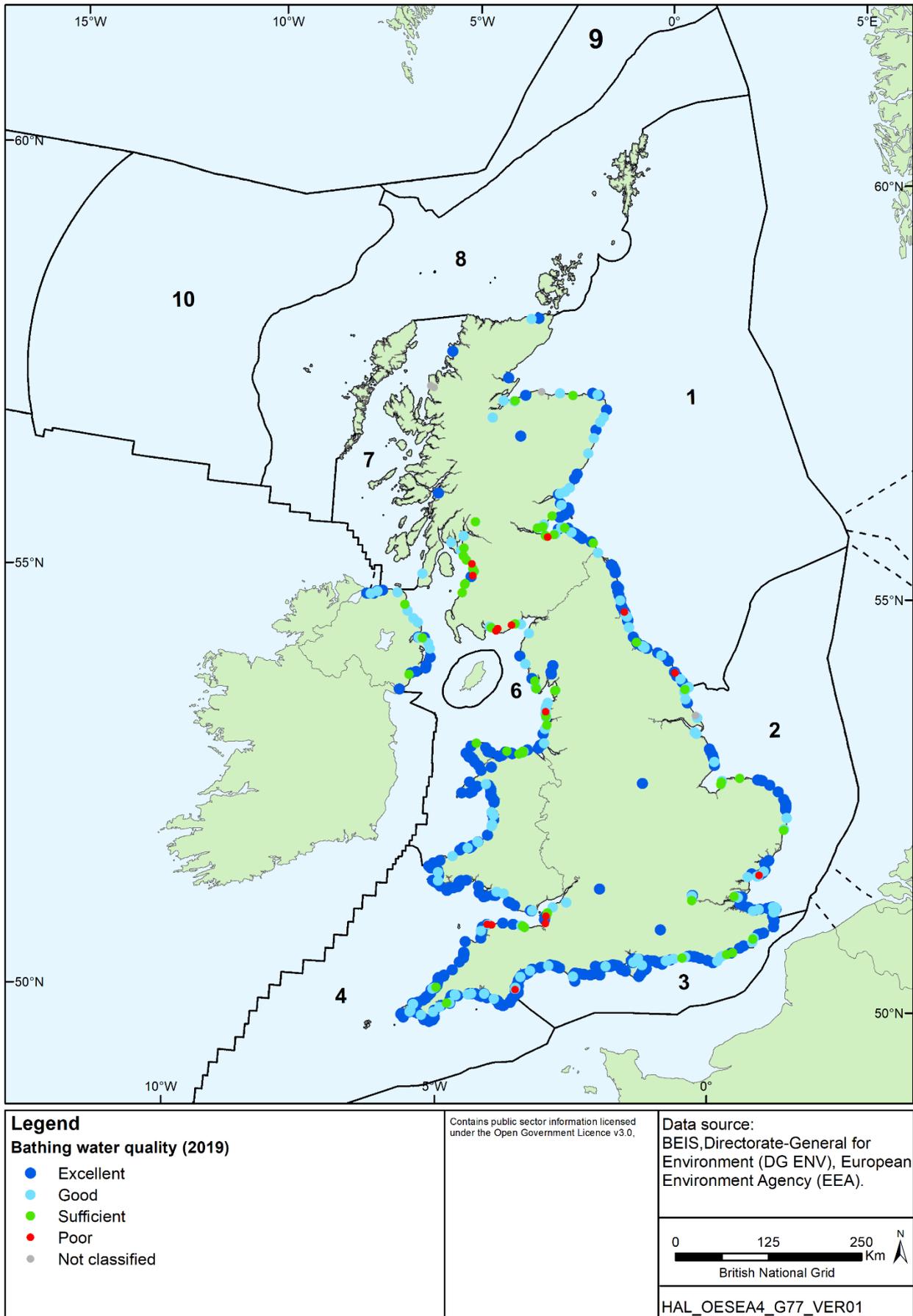


Figure Ag1.5: Coastal bathing waters reported during the 2019 bathing season



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