



Quarterly publication of National Statistics on the incidence and prevalence of tuberculosis (TB) in Cattle in Great Britain – to end June 2021

Key points

- In England overall, the herd incidence rate for the 12 months to end June 2021 was 9.2, an decrease of 0.3 on the previous 12 months. Between June 2020 and June 2021, the herd prevalence rate increased in all areas of England ([Table 1](#) and [Figure 2](#)). This occurred despite the number of non-OTF herds decreasing, because the total number of herds registered on Sam has also been decreasing due to cleansing of the herd register.
- In Scotland, which has had officially TB-free (OTF) status since 2009, herd incidence and herd prevalence remain very low and stable.
- In Wales herd incidence and herd prevalence increased slightly between June 2020 and June 2021.
- Total animals slaughtered due to a TB incident in England in the 12 months to June 2021 increased 9% on the previous 12 months to 30,298. In Wales the number slaughtered was 10,755, a decrease of 1% ([Table 6](#)).

The next quarterly notice is to be published on Wednesday 15 December 2021.

Short term changes in these statistics should be considered in the context of long-term trends. The charts in this statistical notice give the latest indication of how trends in bovine TB have changed since 1996. See [Section 2 – Figures of Herd Incidence and Herd prevalence](#).

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Section 1 - Key tables summarising key bTB data to June 2021

1.1 Herd incidence and herd prevalence

The headline measure of **herd incidence** is the rate of new herd incidents per 100 herd years at risk. The rate is based around the total amount of time that herds tested were unrestricted and at risk of infection since the end of their last TB incident or negative herd test, rather than the total number of tests carried out on those herds. The rate in the High Risk Area of England was 15.5 at the end of June 2021, which means for every 1000 unrestricted herds undergoing bTB surveillance in that period APHA detected on average 155 new breakdowns. A [document describing](#) the herd years at risk measure is available online.

Herd prevalence is defined as the percentage of all registered herds which were not Officially TB Free (OTF) due to a TB incident. [Table 1](#) compares the percentage of restricted herds at end of June 2021 with end of June 2020. The long term trend from 1996 is visualised at [Figures 5 and 6](#). Over the past six months there has been significant data cleansing of the herd register which has resulted in an unusual drop of 3% in the number of registered herds in England. There are now 2,850 fewer herds recorded in England (1,122 of which were in the HRA) at June 2021 compared to June 2020. [Table 3](#) shows that non-OTF herds in the HRA decreased by 2% in the period but the reduction in number of registered herds means there is an increase in the herd prevalence rate.

In Wales overall herd prevalence has increased from 5.1% to 5.2%. The greatest regional change in Wales was seen in the Intermediate North area with the High West and Low regions also increasing.

Table 1: Herd incidence and herd prevalence

Region	Herd incidence 12 months to 30 June 20	Herd incidence 12 months to 30 June 21	Herd prevalence at 30 June 20	Herd prevalence at 30 June 21
England (All)	9.5	9.2	4.9	5.2
England - HRA	16.7	15.5	9.2	9.5
England - Edge	9.9	10.1	5.6	6.1
England - LRA	0.9	1.2	0.3	0.4
Scotland (All)	0.7	0.9	0.2	0.1
Wales (All)	6.6	6.7	5.1	5.2
Wales - High West	10.9	10.4	9.6	9.7
Wales - High East	9.0	8.1	5.9	5.4
Wales - Intermediate North	7.5	10.3	6.4	8.1
Wales - Intermediate Mid	3.4	3.4	2.1	2.1
Wales - Low	1.7	2.6	0.9	1.4

1.2 New herd incidents and non-OTF herds

The number of new TB herd incidents in the 12 months to end of June 2021 compared to 12 months to end June 2020 ([Table 2](#)):

- decreased by 3% in England, despite increases in the Edge Area and LRA.
- increased in Wales by 3% to 633, with the Intermediate North and Low TB areas showing increases.
- decreased by 4 in Scotland.

Table 2: New herd incidents 12 months end

Region	June 20	June 21	Year-on-year change
England (All)	3,190	3,095	-3%
England - HRA	2,422	2,288	-6%
England - Edge	647	661	2%
England - LRA	121	146	21%
Scotland (All)	38	34	-11%
Wales (All)	614	633	3%
Wales - High West	259	254	-2%
Wales - High East	205	187	-9%
Wales - Intermediate North	53	76	43%
Wales - Intermediate Mid	58	56	-3%
Wales - Low	39	60	54%

The number of herds under restriction – or more formally herds not officially TB free at the end of the period due to a bovine TB incident is the top line of the herd prevalence calculation used in Table 1. The bottom line is the number of registered active herds, which has been subject to data cleansing in recent months. Examining the counts of non-OTF herds can identify particular drivers for trends. See also the [county datasets](#).

The number of herds under restriction due to a TB incident at the end of June 2021 compared to the end of June 2020 ([Table 3](#)):

- decreased by 1% in England, despite increases in the Edge and Low Risk Areas, due to a decrease in the High Risk Area.
- increased in Wales by 2% to 606, with only the High East and Intermediate Mid TB Areas showing decreases.
- in Scotland there was a decrease of 11 herds.

The large percentage changes in the Intermediate North and Low TB areas of Wales are due to small baseline numbers.

Table 3: Non-OTF herds

Herds not officially TB free at the end of the period due to a bovine TB incident

Region	June 20	June 21	Year-on-year change
England (All)	2,450	2,430	-1%
England - HRA	1,880	1,841	-2%
England - Edge	504	514	2%
England - LRA	66	75	14%
Scotland (All)	30	19	-37%
Wales (All)	595	606	2%
Wales - High West	303	303	0%
Wales - High East	166	148	-11%
Wales - Intermediate North	58	73	26%
Wales - Intermediate Mid	43	42	-2%
Wales - Low	25	40	60%

In Scotland the number of non-OTF herds is very low and approximately 59% of cattle herds are now exempt from routine TB surveillance testing. In Scotland, the England LRA, and Wales Low area there are proportionately more false positive results to the tuberculin skin test than elsewhere in GB. See articles in the [Veterinary Record](#). Consequently it is also important to consider the number of new herd TB incidents where officially TB free (OTF) status is withdrawn (OTFW) following confirmation of TB by post-mortem examination or laboratory culture of tissue samples.

In the Low Risk Area of England:

- In the 12 months to June 2021 there were 42 OTFW incidents, an increase of 14 on the previous 12 month period. The OTFW herd incidence rate per 100 herd-years at risk increased slightly from 0.2 to 0.4. ([table 4](#) and [table 5](#))

In Scotland:

- There were 7 OTFW incidents in 12 months to June 2021, compared to 18 in the previous 12 months.
- The OTFW herd incidence rate of breakdowns per 100 herd-years at risk decreased from 0.4 to 0.2 in the 12 months to end June 2021.

In the Low TB area of Wales:

- There were 24 OTFW incidents in 12 months to end June 2021, compared to 17 in the previous 12 months.
- The OTFW herd incidence rate of breakdowns per 100 herd-years at risk was 1.6 at the end of June 2021, compared to 1.1 at the end of June 2020.

The large percentage changes seen in the LRA, Scotland, and the Intermediate North and Low TB areas of Wales are due to small baseline numbers.

Table 4: OTFW new herd incidents 12 months end

New herd incidents where OTF status is withdrawn (OTFW)

Region	June 20	June 21	Year-on-year change
England (All)	1,967	1,732	-12%
England - HRA	1,562	1,353	-13%
England - Edge	377	337	-11%
England - LRA	28	42	50%
Scotland (All)	18	7	-61%
Wales (All)	349	319	-9%
Wales - High West	146	116	-21%
Wales - High East	131	116	-11%
Wales - Intermediate North	29	42	45%
Wales - Intermediate Mid	26	21	-19%
Wales - Low	17	24	41%

Table 5: OTFW herd incidence

New herd incidents OTFW per 100 herd years at risk

Region	12 months to 30 June 20	12 months to 30 June 21
England (All)	5.9	5.2
England - HRA	10.8	9.2
England - Edge	5.8	5.2
England - LRA	0.2	0.4
Scotland (All)	0.4	0.2
Wales (All)	5.9	5.7
Wales - High West	10.5	9.3
Wales - High East	8.3	7.6
Wales - Intermediate North	6.3	9.8
Wales - Intermediate Mid	2.6	2.1
Wales - Low	1.1	1.6

Note on [Table 5](#): In Wales, some TB incidents have OTF status withdrawn for epidemiological reasons only, in the absence of post-mortem confirmation. These are included in the time at risk measure in Table 5, but for technical reasons, it is currently not possible to include them in the raw count of OTFW incidents.

1.3 Animals Slaughtered as a result of a TB incident

There is a year-on-year 9% increase in the number of cattle slaughtered due to a TB incident in England. In all three risk areas more animals were slaughtered in the 12 months ending June 2021 than in the previous 12 months. For county trends see the [datasets](#).

In Wales overall there was a decrease of 1% in the number of animals slaughtered in the 12 months ending June 2021 compared to the previous 12 months, despite only the High West and Intermediate North TB Areas showing decreases.

The large percentage changes seen in Scotland and the Low TB area of Wales are due to low baseline numbers. In Scotland a significant contributor to the increase in total animals slaughters was a large number of cattle slaughtered in Ayrshire as part of an ongoing breakdown on one holding.

Table 6: Total animals slaughtered 12 months end

Region	June 20	June 21	Year-on-year change
England (All)	27,709	30,298	9%
England - HRA	21,444	23,975	12%
England - Edge	5,796	5,846	1%
England - LRA	469	477	2%
Scotland (All)	235	438	86%
Wales (All)	10,824	10,755	-1%
Wales - High West	6,832	6,349	-7%
Wales - High East	1,971	1,983	1%
Wales - Intermediate North	1,254	1,184	-6%
Wales - Intermediate Mid	539	698	29%
Wales - Low	228	541	137%

Table 6 Includes skin test reactors and gamma test positive animals, direct contacts and inconclusive reactors (reported for Wales only since April 2017).

Section 2 – Figures of Herd Incidence and Herd prevalence

2.1 - List of figures

Figure	Measure	Geography	Timing
1	<u>New herd incidents per 100 herd years at risk of infection during the year</u>	GB	quarterly
2	<u>New herd incidents per 100 herd years at risk of infection during the year</u>	England risk areas	quarterly
2a	<u>New herd incidents per 100 herd years at risk of infection during the year – Wales, per quarter</u>	Wales TB areas	quarterly
3	<u>New herd incidents with officially TB-free status withdrawn (OTFW) per 100 herd years at risk of infection during the year</u>	GB	quarterly
4	<u>New herd incidents with officially TB-free status withdrawn (OTFW) per 100 herd years at risk of infection during the year</u>	England risk areas	quarterly
4a	<u>New herd incidents with officially TB-free status withdrawn (OTFW) per 100 herd years at risk of infection during the year – Wales, per quarter</u>	Wales TB areas	quarterly
5	<u>Number of herds under disease restrictions at the end of the period as a percentage of registered and active herds</u>	GB	monthly
6	<u>Number of herds under disease restrictions at the end of the period as a percentage of registered and active herds</u>	England risk areas	monthly
6a	<u>Number of herds under disease restrictions at the end of the period as a percentage of registered and active herds – Wales</u>	Wales TB areas	monthly

2.2 Figures showing Herd incidence since 1996

Figure 1: New herd incidents per 100 herd years at risk of infection during the year - GB, per quarter

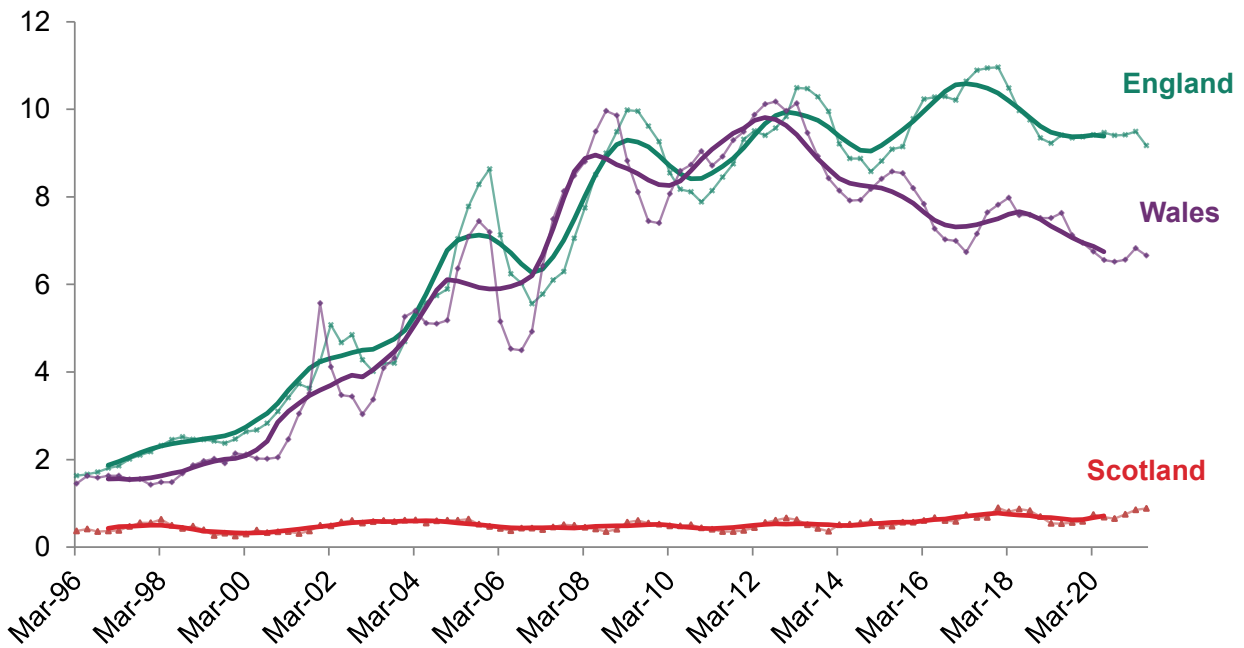
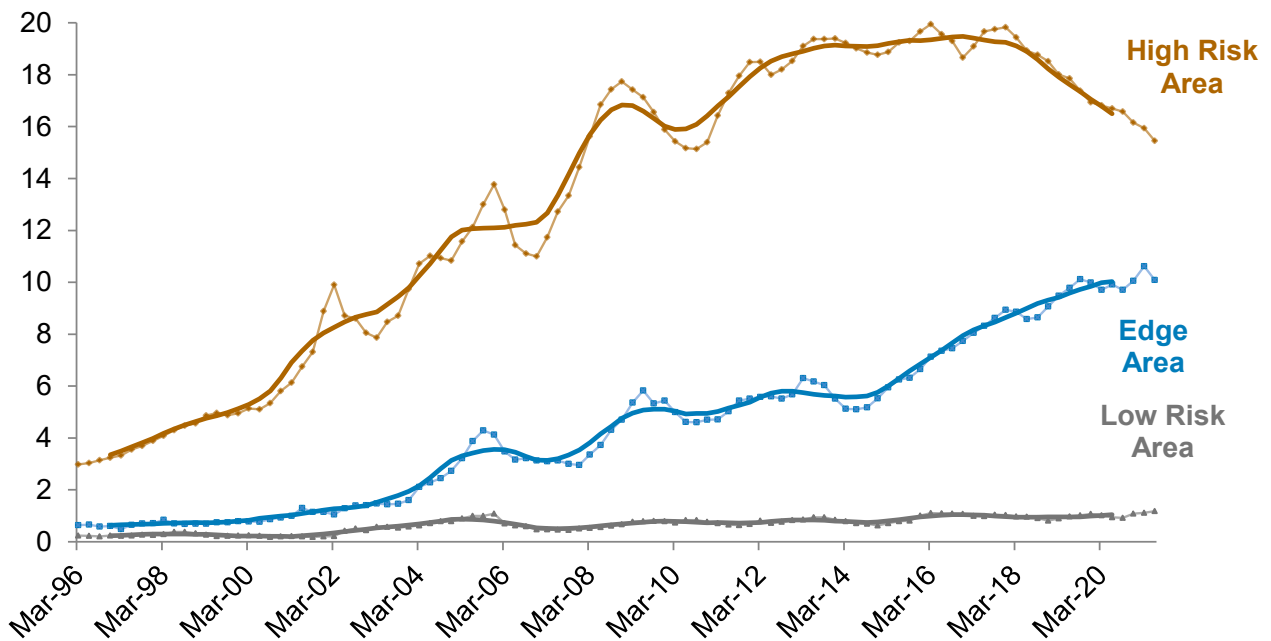


Figure 2: New herd incidents per 100 herd years at risk of infection during the year – England, per quarter



Bold lines represent 24 month centred rolling averages.

Figure 2a: New herd incidents per 100 herd years at risk of infection during the year – Wales, per quarter

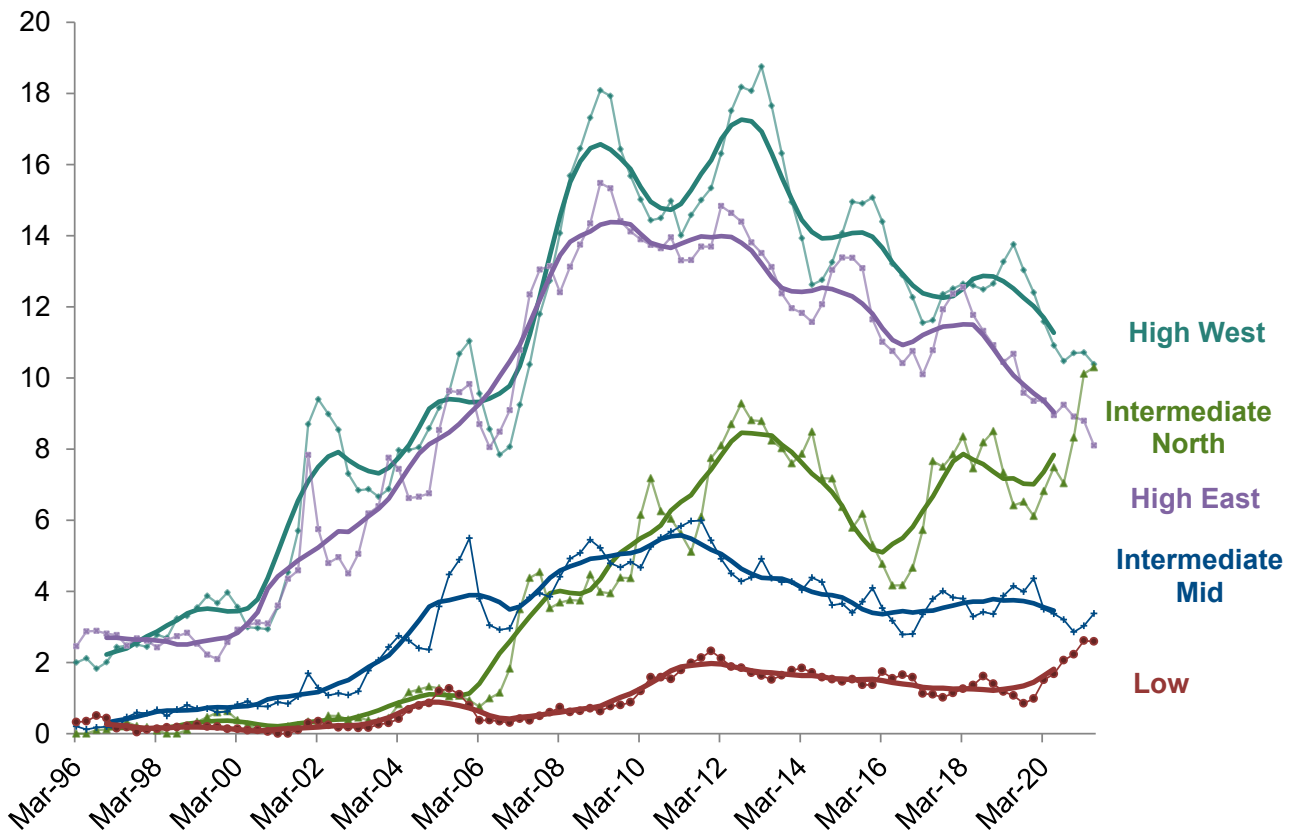
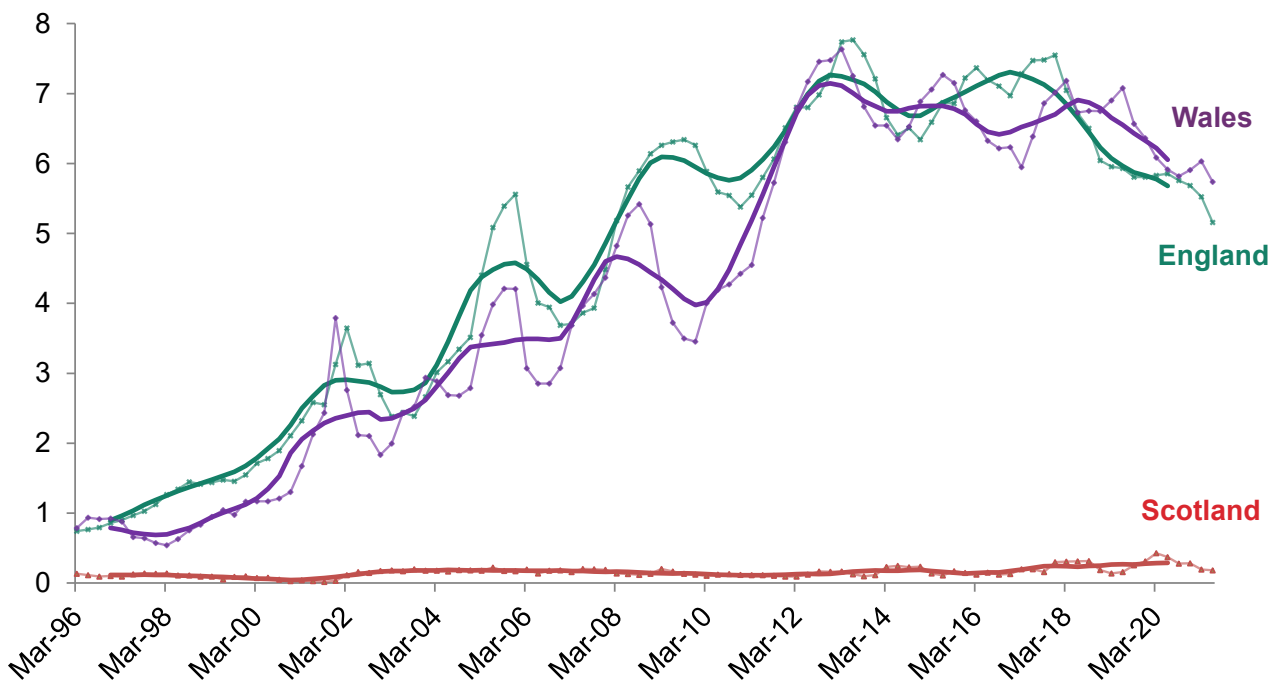


Figure 3: New herd incidents with officially TB-free status withdrawn (OTFW) per 100 herd years at risk of infection during the year – GB, per quarter



Bold lines represent 24 month centred rolling averages.

Note: from 2011, the figures presented in figure 3 for OTF-W incidents per 100 herd years at risk in Wales are not directly comparable to England or Scotland. This is due to the inclusion of some incidents in Wales that have their OTF status withdrawn for epidemiological reasons only, in the absence of post-mortem confirmation. The figures presented here are not comparable with those for Wales in the spreadsheet downloads.

Figure 4: New herd incidents with officially TB-free status withdrawn (OTFW) per 100 herd years at risk of infection during the year – England, per quarter

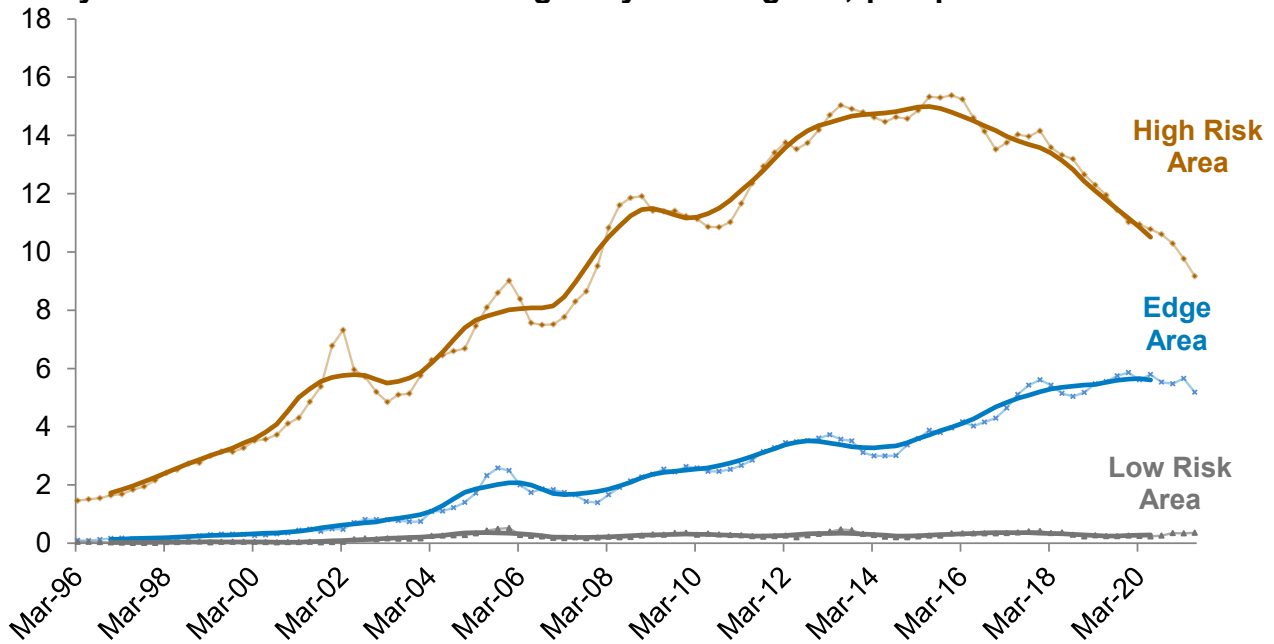
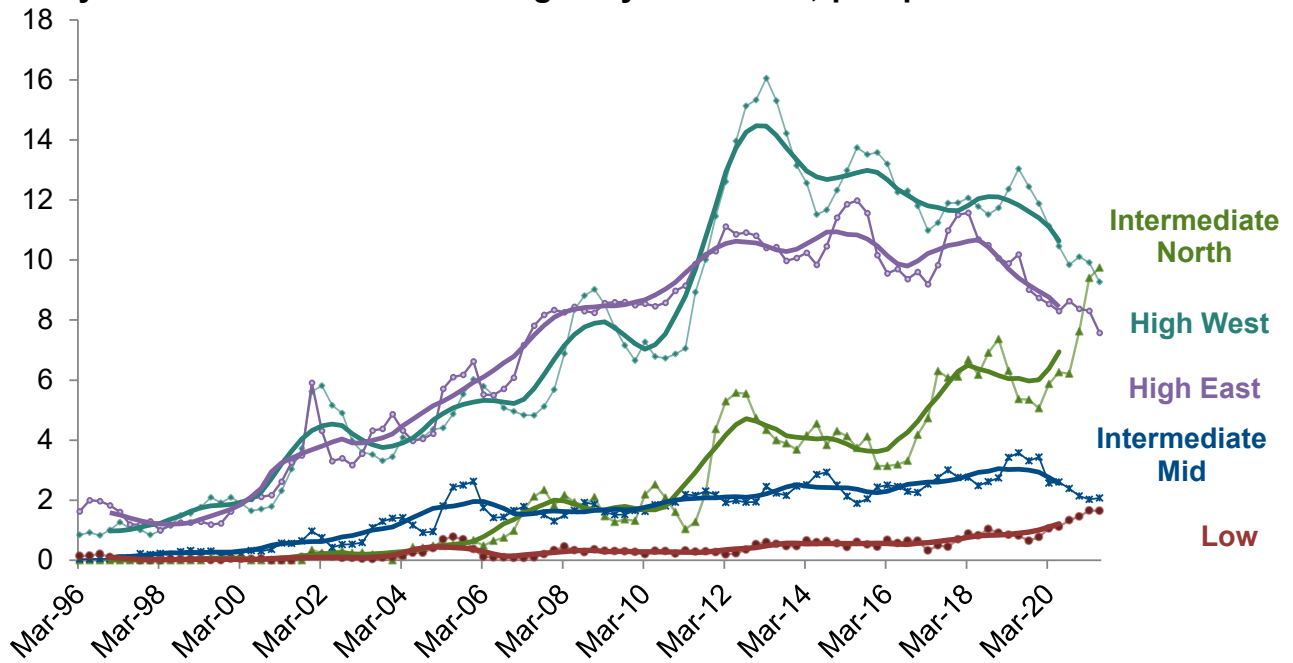


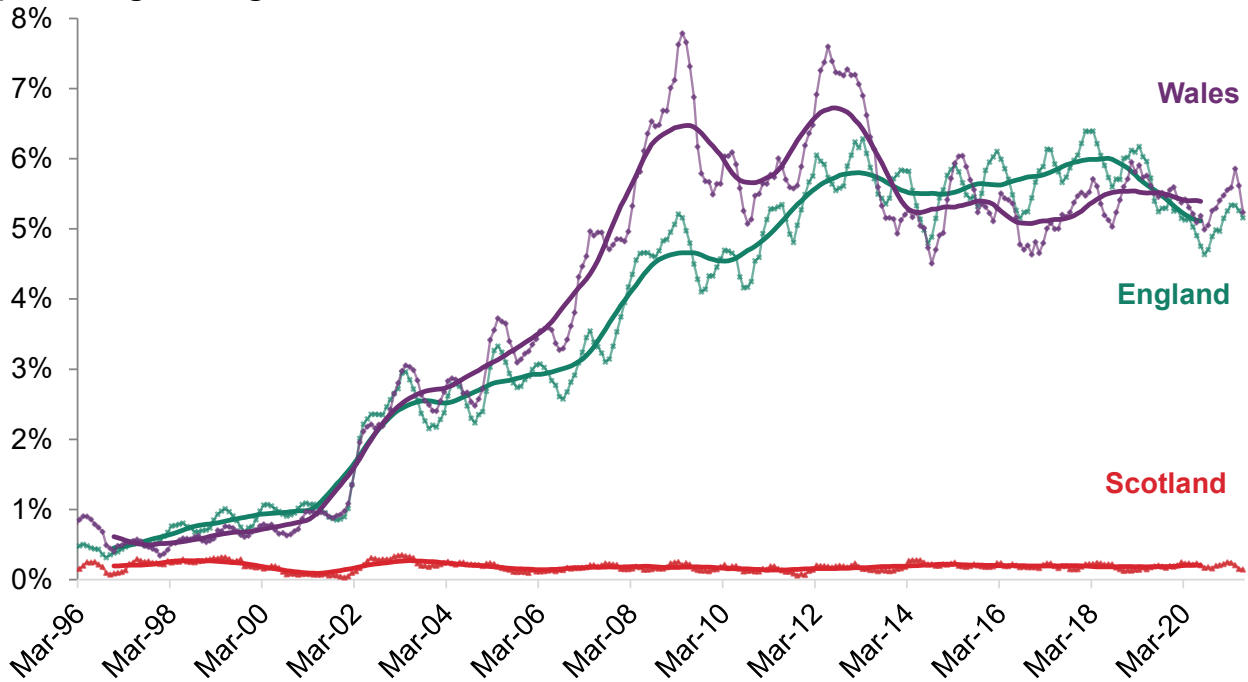
Figure 4a: New herd incidents with officially TB-free status withdrawn (OTFW) per 100 herd years at risk of infection during the year – Wales, per quarter



Bold lines represent 24 month centred rolling averages.

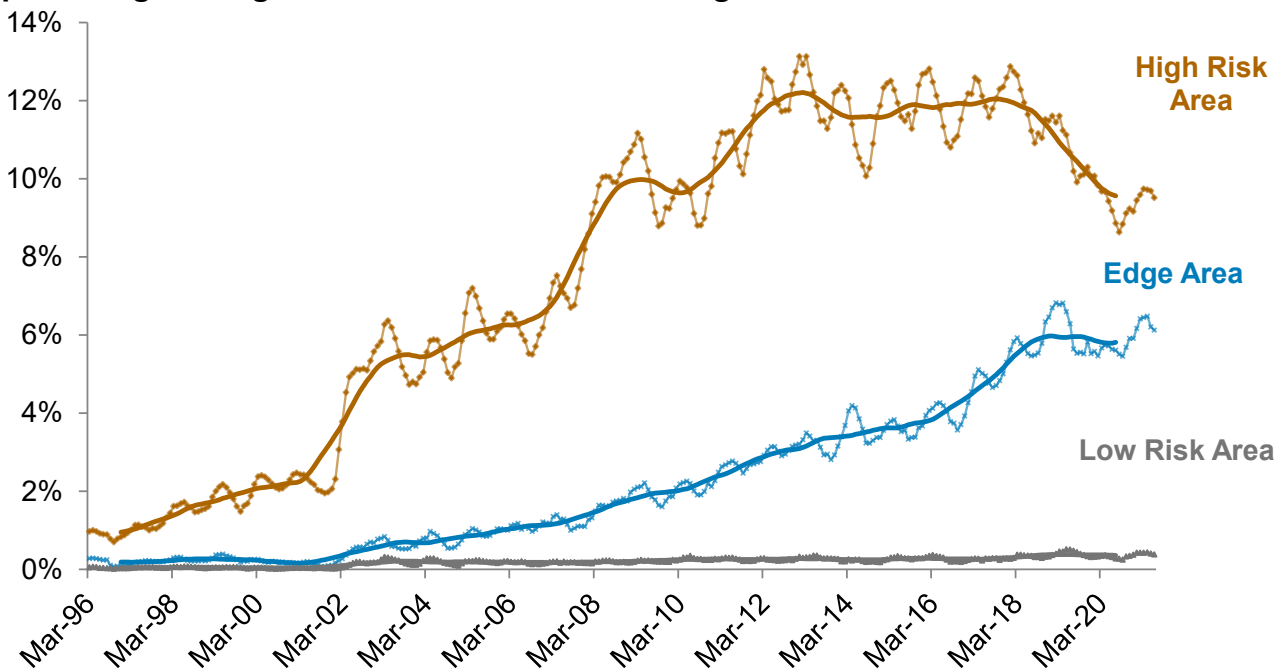
2.3 Figures showing herd prevalence since 1996

Figure 5: Number of herds under disease restrictions at the end of the period as a percentage of registered and active herds – GB



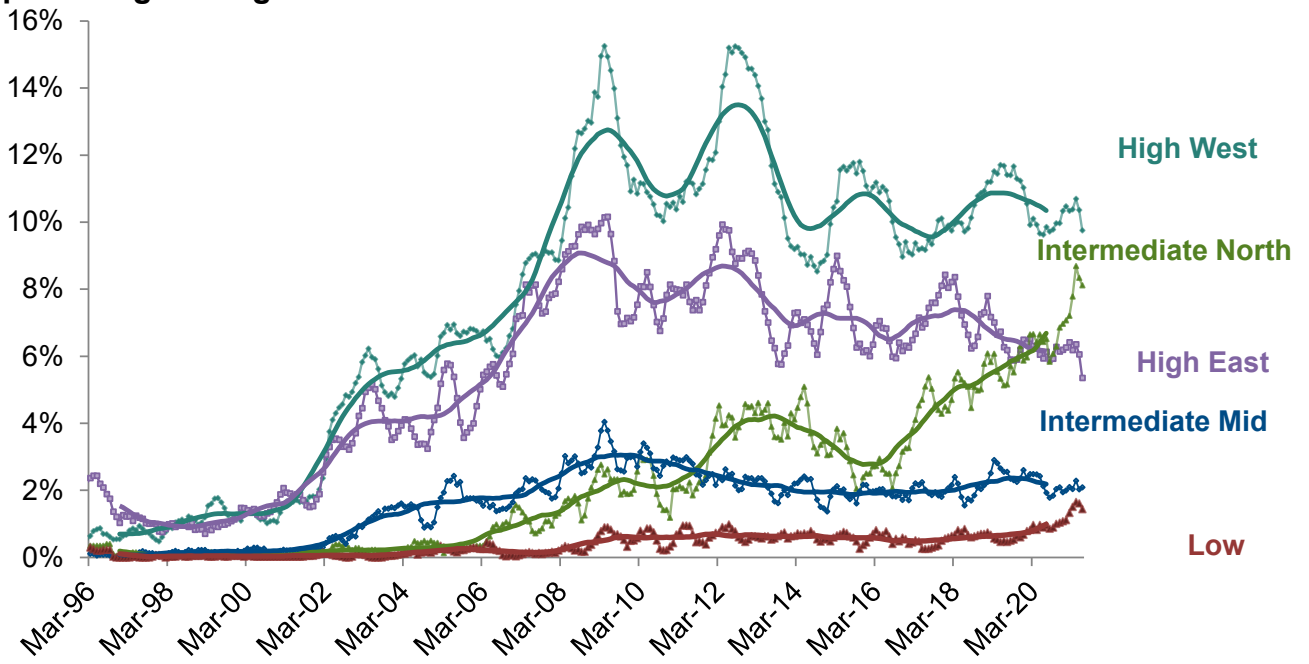
Bold lines represent 23 month centred rolling averages.

Figure 6: Number of herds under disease restrictions at the end of the period as a percentage of registered and active herds – England



NB England risk areas are as per the revised boundaries that came into force January 2018. Bold lines represent 23 month centred rolling averages.

Figure 6a: Number of herds under disease restrictions at the end of the period as a percentage of registered and active herds – Wales



Bold lines represent 23 month centred rolling averages.

Section 3 - About these statistics

3.1 Notes on the data

These statistics are obtained from the Animal and Plant Health Agency (APHA) work management IT support system (SAM), used for the administration of TB testing in GB. They are a snapshot of the position on the date on which the data was extracted.

These statistics may be subject to small revisions until all test results are available. In particular, figures for the previous two calendar years and the current year will be subject to further revision as test and incident records are completed. The herd incidence figures are revised quarterly. The total herds registered on Sam figures are not revised as changes are not backdated, but ongoing cleansing of the herd register can result in sudden drops in the number of registered herds.

[Data for Northern Ireland](#) is not presented alongside the GB figures and is not produced on a comparable basis.

[Headline data from 1996 onwards is available](#) to download for GB countries, Wales TB areas and England risk areas.

“England Bovine Tuberculosis (TB) Quarterly Overview” and “Great Britain Bovine Tuberculosis (TB) Quarterly Overview” are available to download as [visual representations](#) of four key measures.

An [interactive dashboard](#) has been introduced to allow online interrogation of the statistics.

3.2 National Statistics Status

National Statistics status means that our statistics meet the highest standards of trustworthiness, quality and public value, and it is our responsibility to maintain compliance with these standards. The continued designation of these statistics as National Statistics was confirmed in December 2017 following a [compliance check](#) by the Office for Statistics Regulation. The statistics last underwent a full assessment against the [Code of Practice](#) in 2012 – [Assessment Report 240](#).

Since the latest review by the Office for Statistics Regulation, we have continued to comply with the Code of Practice for Statistics, and have made the following improvements:

- added more value by providing more detailed breakdowns of TB areas in Wales
- included a glossary of key terms and a mapping of English counties to TB regions
- introduced quarterly overview documents for England and Great Britain
- from Q4 2019 included an [interactive dashboard of measures](#)
- redesigned the release and datasets to achieve compliance with accessibility regulations (Q2 2020)
- new groupings in the dataset of English counties by TB Risk Area (Q2 2020).
- provided county-level values for herd incidence (Q4 2020)

A future change to the 2021 statistics will be the inclusion of all IDEXX antibody tests carried out in England and Wales, as well as animals slaughtered after testing positive to an antibody test, which are currently undercounted.

3.3 Feedback on this release

We encourage our users to engage with us so we can improve our National and Official Statistics and identify gaps in the statistics that we produce. See also our [response to our 2020 user survey](#).

This document has been designed to meet the accessibility requirements outlined in WCAG 2.1:

- all figures included in this release have accompanying alt-text descriptions
- the release content has been adapted for easier processing by screen-readers
- all text and figures use a high contrast colour scheme, and all figures use colour palettes that are visible to colourblind readers

Should you have any comments on this statistical release and how to improve it to meet your needs please contact us by email to tbstatistics@defra.gov.uk

Section 4 - Detailed information on incidence and prevalence of TB in Cattle in Great Britain

4.1 In this section

[Why monitor statistics about bTB?](#)

[Factors affecting statistics on incidence and prevalence of TB in cattle](#)

[Trends in TB](#)

[Surveillance policy in GB](#)

[Current differences in surveillance policy in GB](#)

[Methodology](#)

[Trends in herd tests](#)

4.2 Why monitor statistics about bTB?

Legal requirements

Defra policy is to achieve OTF status for England by 2038, and Welsh Government policy is to achieve OTF status between 2036 and 2041. Scotland achieved OTF status in September 2009. bTB statistics are used in England and Wales to measure progress towards this target, and to support the annual case for Scotland to retain its OTF status, as the qualification is based on herd incidence.

Monitoring policy effectiveness

Statistics on the incidence of bTB in cattle herds and the number of cattle slaughtered as a result of bTB are used by policymakers to monitor the spread and concentration of the disease and to inform decisions around the potential approaches to controlling it.

4.3 Factors affecting statistics on incidence and prevalence of TB in cattle

Short term changes in these statistics should be considered in the context of long term trends. Variation in the monthly and quarterly statistics can occur for a number of reasons, including:

- **Disease:** an increase in the trend can be the result of a higher proportion of herds experiencing a breakdown because of an increase in the underlying incidence of bTB.
- **Surveillance policy** (including the frequency of testing): Cattle herds in high risk areas are tested six monthly or annually and cattle herds in low risk areas are usually tested every four years. In Scotland 59% of cattle herds are now exempt from routine TB surveillance testing. See [Surveillance policy in GB](#). If cattle herds in a low prevalence region are tested more frequently than every four years, the increase in the number of bTB tests will not necessarily be followed by a similar increase in the detection of infected cattle and so this may result in a decline in the incidence rate.
- **Seasonality:** more animals are tested when they are housed, during winter months, compared with when they are grazing outdoors in summer months. This is simply because it is easier to gather and test the cattle when they are already contained within a building. The trend lines in [Figures 1](#) to [6](#) account for this by presenting the 2 year moving average.
- Number of **testing days** in a given month: tests tend to be carried out at the beginning of the working week and the results collected and entered into the data system towards the end of the week. Months containing five Fridays may therefore have more positive test results than months containing four.

4.4 Trends in TB

There has been an overall long-term upward trend in the incidence of TB in cattle herds in England and Wales since these statistical series began in 1996 although there is evidence that the rate of new incidents is levelling off in most areas of the country.

There was a fairly steady increase in the herd incidence rate until early 2001 when there was an outbreak of foot and mouth disease (FMD) from February to October. During this period TB testing was suspended. In the meantime, new bTB breakdowns continued to be detected on farms through routine post-mortem meat inspection of cattle carcasses in slaughterhouses. Following the 2001 FMD outbreak there was a gradual resumption in TB testing. This led to an unusually high incidence rate for 2001 and 2002, when effectively two years' worth of breakdowns were identified in one year when the normal testing regime resumed.

There appears to be a three-year cycle in the bTB herd incidence rate from 2001 onwards. This can be observed in [figures 1 to 6](#), above, with peaks in 2005, 2008 and (to a lesser extent) 2013, and troughs in 2006 and 2009. This pattern has stabilised somewhat in recent years. There is no clear explanation for this pattern, because bTB is a chronic disease with a complex epidemiology and reservoirs of infection in cattle and, in some areas of GB, wildlife. There has been no stable time series because of surveillance and testing changes. For example, there have been different herd testing frequencies in each parish over time, ranging from annual to four-yearly and changing every year until those frequencies were unified in Wales in 2010 (annual) and in England in 2013 (annual and four-yearly). There has since been the introduction of 6-monthly testing.

There are several possible explanations:

1. The smoothed trend represents true seasonal changes in the transmission risk and prevalence of infection in wildlife and cattle populations. However, there is no strong evidence to support this.
2. After FMD, higher risk herds were tested every 3 to 4 years and could have contributed to a cyclically higher incidence rate. However, breakdowns in the 4-yearly (and formerly 3-yearly) testing areas represent a small and decreasing proportion of the breakdowns in any given year.
3. When testing resumed in 2002 following the 2001 FMD outbreak, high-risk herds may have been identified and put under restrictions if a reactor was identified, then control tested for a period (when they cannot generate a new incident). Once the bTB incident has been resolved and OTF herd status is restored, the herd becomes susceptible to a new incident as it undergoes post-breakdown surveillance tests at 6 and 18 months after regaining OTF status.
4. The incidence rate reflects changes to testing policy unrelated to the FMD outbreak, in particular increases in testing in 2005 and 2008.

In terms of prevalence (the percentage of herds with an open TB incident), [figure 5](#) shows an increase in England and Wales at the beginning of 2002. This may have been the result of the suspension of TB testing during the FMD outbreak in February-October 2001 (including the 60-day tests of TB-infected herds to regain OTF status) along with the detection of new breakdowns through routine slaughterhouse surveillance. Although TB herd testing gradually resumed from the end of 2001, a proportion of higher-risk herds were put under TB restrictions pending completion of their overdue tests. Prevalence continued to increase steadily from 2002. In Wales there were peaks in 2009 and 2012, following which there has been a decline and stabilisation of the trend. After a peak in England in early 2013

the trend appears to have stabilised. However, for both England and Wales it is too early to conclude that this is part of a new longer term trend.

4.5 Surveillance policy in GB

Bovine TB surveillance and control policy – including how frequently animals are tested for bTB – varies between England, Wales and Scotland and has changed over time.

Timeline

1990s: most herds in GB tested every four years and background testing intervals determined on a parish basis. Herds in parishes with a high incidence of bTB breakdowns (in the South West of England and in parts of Wales) are tested on an annual or biennial basis, with a smaller number of three-yearly testing herds.

2004 to 2010: the proportion of parishes and herds in England and Wales with annual testing increases gradually as the disease spread, with a corresponding decrease in the proportion of parishes with four-yearly testing.

2005 to 2006: mandatory pre-movement skin testing of cattle in annually tested herds was introduced. First in Scotland in September 2005 followed by England in June 2006 and Wales in May 2006.

October 2009: the European Commission designates Scotland as an officially bTB free region of the UK.

January 2010: In England, a core annual testing area is established, spanning entire counties in the South West and West Midlands (the 'high risk area') and surrounded by a 'buffer' of two-yearly testing parishes. Most of the rest of England remains on background four-year testing. The Welsh Government puts all cattle herds in Wales on annual bTB testing (with herds in the small Intensive Action Area of West Wales put on 6-monthly bTB testing).

2011 and 2012: further expansion of the annual testing area in England to the east and north.

January 2013: herd testing intervals are determined on a county basis and England is split into annual testing and four-yearly testing counties. Annual testing of herds is extended to all the counties at the edge of the high risk area. Three- and two-yearly testing is abolished.

January 2015: all cattle herds in the edge area of Cheshire are put on six-monthly testing.

April 2016: mandatory post-movement skin testing of cattle was introduced in the Low risk area of England

October 2017: regionalised approach to TB eradication applied in Wales with the introduction of Low, Intermediate and High TB Areas.

January 2018: annual testing of cattle herds replaced with six-monthly herd testing in the higher incidence regions of the expanded Edge Area and annual herd testing supplemented with targeted ('radial') testing of herds located within a 3km radius of new OTFW incidents detected in the rest of the Edge Area.

2020 The IDEXX antibody test was approved as a "relevant test" under Part 2 of the Tuberculosis (Wales) Order 2010 (as amended). Any animal giving rise to a positive reaction to the antibody test will be considered a reactor and removed, with compensation being provided to the owner. These statistics do not yet capture all antibody test positive animals slaughtered and will be updated during 2021 reporting year.

January 2021: 6-monthly testing introduced in Staffordshire and Shropshire in the High Risk Area of England, with plans to extend this to the entirety of the High Risk Area in July 2021. [2021 testing intervals and a map of GB TB areas are published online.](#)

4.6 Current differences in surveillance policy in GB

The [regional and county-level statistics](#) published as part of this statistical notice show that there are considerable differences in the distribution and frequency of bovine TB across GB.

Since 2011, the trends for the herd incidence rate showing incidents with officially TB-free status withdrawn (OTFW) per 100 herd years at risk of infection during the year (i.e. [table 5](#) and [figure 3](#)) are not directly comparable for Wales and the other countries of GB. In Wales the number of incidents includes those where there is no confirmation of TB via post mortem examination or bacteriological culture, but where the herd's OTF status is withdrawn for epidemiological reasons. The overall herd incidence rate ([figure 1](#) and [table 1](#)) should be used to compare countries.

Scotland, which has had officially TB-free (OTF) status since 2009, has relatively few herd breakdowns. The herd incidence is very low and stable and is largely driven by sporadic introductions of infected cattle into Scotland. Scotland has in place a risk-based routine herd testing policy. This targets testing at higher risk herds. Around 59 per cent of herds are considered low risk herds and are exempt from routine testing. These are herds which have 50 or fewer animals, minimal import of animals from high risk areas and send a high proportion of animals to slaughter. Herds that are not exempt are tested every four years. In **Wales**, TB incidence and prevalence varies across regions. From 1 October 2017, a regionalised approach to TB eradication applies in Wales with the introduction of Low, Intermediate and High TB Areas. This means that measures can be tailored to address the varying risks and disease. The TB areas in Wales are established on the basis of epidemiological evidence and risks in each area. [A map of the areas](#) is available online. This regionalisation brought some changes to Pre- and Post- movement testing rules. From 1 October 2017 pre-movement testing is not required for movements within the Low TB Area and from the Low TB Area to other parts of Wales. Cattle moved into the Low TB Area from other areas (not including the English LRA) require a post-movement test.

All herds in Wales are tested for the disease at least annually. The strategically-located Intensive Action Area (north Pembrokeshire and small parts of Ceredigion and Carmarthenshire) has one of the highest incidence rates of bovine TB in Wales. Here there are extra measures in place to control the disease, such as stricter cattle controls, 6-monthly testing and improved biosecurity.

In **England**, there are wide geographical variations in the incidence and prevalence of bTB. This is reflected in the division of the country into three different epidemiological areas, with different disease control strategies and herd testing regimes applied in each of them:

- In the Low Risk Area of the North, East and South East of England, the incidence of bTB is very low and stable and most cattle herds are routinely tested every four years. Similar to Scotland, the majority of breakdowns in the Low Risk Area can be linked to movements of undetected infected cattle from other areas of GB.
- In the Edge Area, the herd incidence is higher than in the Low Risk Area, although this varies from county to county. After a relatively stable period, prevalence has been increasing in more recent years [Figure 6](#). On 1 January 2018 the five part Edge, part HRA counties: Cheshire, Derbyshire, East Sussex, Oxfordshire and Warwickshire, moved to all Edge. [Testing intervals have been published](#).
- In the High Risk Area of the West Midlands and South West of England, the incidence and prevalence of infected cattle have increased steadily to relatively high levels. This is partly a result of a reservoir of endemic *M. bovis* infection in the local wildlife. There is evidence of a slowing down in both the incidence and prevalence rates since around 2012. [Figure 2](#) and [Figure 6](#).

4.7 Link to Methodology Documentation

For a description of the data sources and methodology used in the calculation of the TB statistics, together with notes on data revisions policy etc., please refer to the '[Background and Methodology](#)' document.

4.8 Trends in herd tests

From October 2015 to November 2016 there were steady decreases in the number of TB tests completed on herds. The decrease is mainly as a result of changes in APHA testing procedures made in November 2015, and more specifically to testing of cattle that have moved out of TB-infected herds before detection of the disease ("TB forward tracings"). Changes to these "tracing" tests include:

- Bespoke tracing tests of individual animals are no longer performed in England if a whole-herd (or similar) test is already due in the herd of destination within 60 days of the tracing test date, and in Wales if the tracing test is due within the existing herd test window.
- Combining multiple tracing tests for a herd where the traced cattle originate from more than one holding and where test deadlines are within a one month period. Such tests were previously counted separately.

TB tracing tests are included in the "Herd tests" and the "Total cattle tests" measures and these changes are thought to account for much of the decrease in the herd test measures.

Annex 1 - Background Information on Bovine Tuberculosis

What is bovine tuberculosis?

Bovine tuberculosis (bTB) is a chronic infectious disease of cattle. The risk bTB poses to human health is low, largely due to milk pasteurisation. The disease is detected either on farms (through mandatory skin tests of cattle herds for bTB at regular intervals) and at slaughterhouses (through post-mortem meat inspection of cattle carcasses).

What are the impacts of bTB?

Bovine TB presents serious challenges to the food and farming industries and has economic and social impacts. The economic costs of a bTB breakdown are shared by farmers and government.

Defra and Welsh Government commissioned research was published on 28 August 2020 on the financial impact of TB on beef and dairy farmers. The [report](#) shows the cost of a TB breakdown directly borne by cattle farms varies significantly, with a median value of around £6,600 across all farms in the survey. Across England and Wales median costs for herds of more than 300 cattle are around £18,600 whilst those for herds up to 50 cattle are around £1,700. Median costs for chronic breakdowns over 273 days are around £16,000.

Costs are incurred for a number of reasons:

- Cattle which are found (or are highly likely) to have bTB are slaughtered. This loses the farmer the value of the animal and its output. Government pays farmers compensation for slaughtered animals which is based on the market value of cattle.
- There are costs associated with testing animals for bTB. Farmers incur costs from gathering animals together, such as paying workers for their time, and government pays the vets' fees for carrying out tests on the herd (and in the event of a breakdown on herds in neighbouring farms).
- When an animal in a herd tests positive for the disease, the whole herd is put under movement restrictions until all the remaining animals are tested repeatedly with negative results. This presents costs to farmers, for example because they are unable to move their cattle to market or buy in replacements for animals that are slaughtered.

Other impacts of high bTB levels can include:

- Restrictions on international trade in cattle and cattle products.
- Significant stress amongst farmers, their families and local communities. See for example [research report SE3120 for Defra, 2008](#).
- The infection spilling over to domestic and wild animals. For example Broughan, J. M., Downs, S. H., Crawshaw, T. R., Upton, P. A., Brewer, J. & Clifto-Hadley, R. S. (2013) *Mycobacterium bovis* infections in domesticated non-bovine mammalian species. Part 1: review of epidemiology and laboratory submissions in Great Britain 2004-2010. *Veterinary Journal* **198**, 346-35.

Additional information on bovine TB

More information on bovine TB in Great Britain can be found online for [England](#), [Wales](#) and [Scotland](#).

[The TB hub](#) contains practical advice for farmers on dealing with bovine TB on their farm, covering everything from biosecurity measures to understanding trading rules.

Annex 2 - Glossary of key terms

Definitions of common terms in this release

Term	Description
Bovine tuberculosis (bTB)	Bovine tuberculosis is caused by the bacterium <i>Mycobacterium bovis</i> (<i>M. bovis</i>). Cattle are the natural host of the bacterium. Many other species, including wildlife such as badgers and less commonly deer, are also susceptible to <i>M. bovis</i> and can develop TB and transmit the infection to other species.
Breakdown	A breakdown is the term used to describe the occurrence in a herd of at least one animal with a positive reaction to the skin test, or the identification of <i>M. bovis</i> in an animal with TB lesions detected at routine slaughter. The affected herd is then placed under restrictions and loses its Officially TB Free (OTF) status.
Direct Contact (DC)	An animal in an OTFW incident that, although not a test reactor, was considered to have been exposed to <i>Mycobacterium bovis</i> and compulsorily slaughtered.
Inconclusive reactor (IR)	An animal showing a positive reaction to bovine tuberculin that was not strong enough for it to be deemed a reactor. Such animals are usually isolated and subjected to a second skin test after 60 days, unless removed earlier as DCs or IFN- γ test reactors or voluntarily slaughtered by their owner.
Headline herd incidence	The incidence of a disease is the disease occurrence in new cases in a defined population over a designated time period. The National Statistics use new herd incidents per 100 herd years at risk of infection during the year as herd incidence definition. Herds which were previously OTF but either had cattle that reacted to a tuberculin test or had a tuberculous animal disclosed by routine meat inspection at slaughter, during the 12 months ending the date shown, divided by the amount of time herds tested during that period were unrestricted and at risk of infection. Figures for Wales include incidents where OTF status has been withdrawn for epidemiological reasons only.
Herd-years at risk	The sum of the time (days, months or years) herds in the population are unrestricted and are therefore at risk of a new incident, among the group of herds that have had a herd-level test during the period of interest.
Time at risk	Time spent not under restriction and at risk of having bTB during the observation period.
Prevalence	The prevalence of a disease is the disease presence in a defined population (at animals or herd level) in a designated time.

Term	Description
Herd prevalence	Herds which were not officially TB-free (i.e. herds under movement restrictions with OTF status suspended or withdrawn) due to a TB incident, at the end of the period as percentage of the number of herds registered on the APHA's Sam (computer) system.
High Risk Area (HRA) of England	In the West Midlands and the South West of England, the incidence and prevalence of infected cattle have increased steadily to relatively high levels. This is partly a result of a reservoir of endemic <i>M. bovis</i> infection in the local wildlife. Herds are tested for bTB annually. 2021 intervals and a map of GB TB areas are published online.
Edge Area of England	In the Edge Area herd incidence is higher than in the Low Risk Area, although this varies from county to county. Herds are tested for bTB annually or every six months. The Edge boundary was updated in January 2018 to include the parts of the counties of Derbyshire, Warwickshire, Oxfordshire, East Sussex and Cheshire that had been designated HRA. It also spans Nottinghamshire, Leicestershire, Northamptonshire, Buckinghamshire and Hampshire. 2021 intervals and a map of GB TB areas are published online.
Low Risk Area (LRA) of England	North, East and parts of South East of England, the incidence of bTB is very low and stable and most cattle herds are routinely tested every four years. Similar to Scotland, the majority of breakdowns in the Low Risk Area can be linked to movements of undetected infected cattle from other areas of GB. 2021 intervals and a map of GB TB areas are published online.
Officially bovine tuberculosis free herd status suspended (OTFS)	Incidents where OTF status was suspended because of reactors in the herds, but post-mortem evidence of TB is not detected. The status remains suspended until further herd tests confirm no infection remains on the farm. Figures for Wales include incidents where OTF status has been withdrawn for epidemiological reasons only.
Officially bovine tuberculosis free herd status withdrawn (OTFW)	Incidents where OTF status was withdrawn from the herd due to the detection of lesions typical of TB during post-mortem examination of one or more test reactors or inconclusive reactors, or where samples from one or more reactor, inconclusive reactor or a slaughterhouse case produce positive culture results for <i>Mycobacterium bovis</i> . Figures for Wales do not include incidents where OTF status has been withdrawn for epidemiological reasons only. These are currently included within the OTFS figures.
Officially TB Free (OTF) status of a country or region	"OTF Status" takes its meaning from European law: for a region or Member State of the EU to be considered to be OTF the annual incidence of herds with confirmed <i>M. bovis</i> infection must not have exceeded 0.1% and at least 99.9% of the herds within it must have been free from bTB at the end of the year for at least six consecutive years.

Term	Description
Single intradermal comparative cervical test (SICCT)	The tuberculin skin test: if tuberculin (a purified sterile cocktail of proteins derived from <i>M. bovis</i> cultures) is injected into the skin of an animal infected with <i>M. bovis</i> , this will cause a localised allergic reaction characterised by temporary swelling of the skin, which is measured 72 hours after the injection. The principle is very similar to the skin tests for TB in humans.
Gamma interferon test (IFN-γ or gIFN)	Laboratory-based blood test approved as an ancillary diagnostic tool that measures the release of γ -IFN in whole blood cultures stimulated with tuberculin.
24 or 23 -month moving average centred	The moving average line has been included in the charts to help identify trends with seasonality smoothed. The centred 24-month moving average has been calculated as the average of the values for the quarter and the previous 3 quarters and subsequent 4 quarters, giving each quarter equal weight. The centred 23-month moving average has been calculated as the average of the values for the month and the previous 11 months and subsequent 11 months, giving each month equal weight.

Further information

A more detailed description of measures is included in the [Background and Methodology document](#).

Annex 3 - England County mapping within regions

Description of table

English county data is published in 3 spreadsheets corresponding to their risk area. [Table 7](#) shows the mapping of county to TB risk area and the former TB statistics region that is no longer used.

Table 7 England County Structure

County	TB Risk Area	TB Stats Region
Avon	High	South West
Bedfordshire	Low	South East
Berkshire	Edge	South East
Buckinghamshire	Edge	South East
Cambridgeshire	Low	South East
Cheshire	Edge	North
Cleveland	Low	North
Cornwall	High	South West
Cumbria	Low	North
Derbyshire	Edge	Midlands
Devonshire	High	South West
Dorset	High	South West
Durham	Low	North
East Sussex	Edge	South East
East Yorkshire	Low	North
Essex	Low	South East
Gloucestershire	High	South West
Greater London	Low	South East
Greater London - East	Low	South East
Greater Manchester	Low	North
Hampshire	Edge	South East
Hereford & Worcester	High	Midlands
Hertford	Low	South East
Isle of Wight	Low	South East
Isles of Scilly	Low	South West
Kent	Low	South East
Lancashire	Low	North
Leicester	Edge	Midlands
Lincolnshire	Low	Midlands
Merseyside	Low	North
Norfolk	Low	South East
North Yorkshire	Low	North
Northamptonshire	Edge	Midlands
Northumberland	Low	North
Nottinghamshire	Edge	Midlands
Oxfordshire	Edge	South East
Shropshire	High	Midlands
Somerset	High	South West
South Yorkshire	Low	North

County	TB Risk Area	TB Stats Region
Staffordshire	High	Midlands
Suffolk	Low	South East
Surrey	Low	South East
Tyne & Wear	Low	North
Warwickshire	Edge	Midlands
West Midlands	High	Midlands
West Sussex	Low	South East
West Yorkshire	Low	North
Wiltshire	High	South West

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