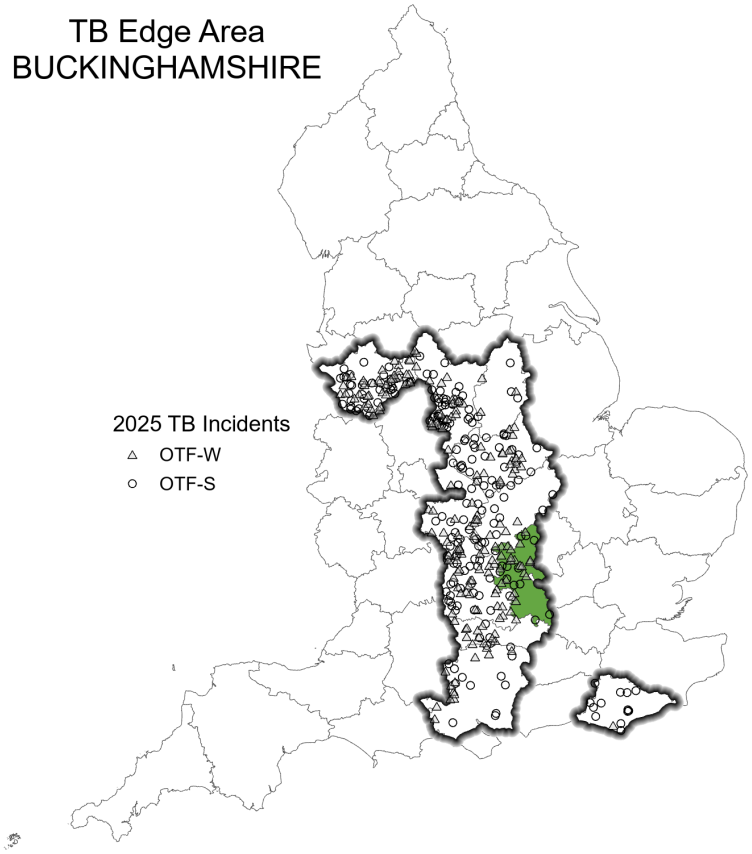
Animal &
Plant Health
Agency

Focus Edge Area County Epidemiology Report of Bovine TB in 2025: Buckinghamshire



Contents

Introduction 3
Classification of TB incidents 3
Cattle industry 4
Number of new TB incidents 7
Disclosing TB surveillance method 8
Slaughterhouse surveillance 11
Duration of TB incidents 11
Incidence of TB 13
Prevalence of TB 14
Recurrent TB incidents 16
  Three-year recurrence 16
Geographical distribution of TB incidents 17
Main risk pathways and key drivers for TB infection 22
Disease Report Forms 22
Areas of Concern 27
TB hotspots 28
  Hotspot 30 29
Forward look 30
Appendix 1: cattle industry demographics 31
Appendix 3: suspected sources of M. bovis infection for all the new OTF-W and OTF-S incidents identified in the report period 37

Introduction

This Focus County report describes the frequency and geographical distribution of TB in 2025 in cattle herds in Buckinghamshire, which is part of the Edge Area of England.

This report is intended for those involved in the control of TB, both locally and nationally. This includes, but it is not limited to:

- cattle farmers
- private veterinarians
- government
- policy makers
- the scientific community

Buckinghamshire was chosen as a Focus County of the Edge Area in 2025 due to a combination of epidemiological and disease control concerns. The county has been identified as an area of ongoing concern, with increasing incidence rates observed in recent years. In particular, the occurrence of clustered TB incidents linked to infection with clade B6-11 of Mycobacterium bovis (M. bovis) has highlighted the need for further investigation into local transmission dynamics. Although cattle herds in Buckinghamshire are currently subject to annual routine TB surveillance testing, the emerging epidemiological picture indicates that additional disease control measures may be required, including consideration of a county-wide action plan or the establishment of an Enhanced Surveillance Area (ESA). These factors are explored in detail in this report, by identifying and investigating long term trends in different epidemiological indicators of TB, highlighting any geographical areas of concern and making recommendations on TB control strategies.

Details of the data handling methodology used in this report, a glossary of terms, and the TB control measures for Great Britain can be found in the explanatory supplement for the annual reports 2025.

Classification of TB incidents

Unless otherwise specified, this report includes all new TB incidents detected during the reporting period (1 January to 31 December 2025). This includes both ‘Officially Tuberculosis-Free Status Withdrawn’ (OTF-W) and ‘Officially Tuberculosis-Free Status Suspended’ (OTF-S) incidents.

OTF-W incidents are those involving the detection in the affected herd of at least:

- one reactor (positive animal) to the Single Intradermal Comparative Cervical Tuberculin (SICCT) test, or a positive animal to the supplementary interferon

gamma (IFN-γ) blood test, with typical lesions of TB identified at post-mortem (PM) meat inspection, or
- one animal (such as a skin test reactor, IFN-γ test-positive animal, or slaughterhouse case) with M. bovis-positive polymerase chain reaction (PCR) test or bacteriological culture results in tissue samples collected from carcases during the post-mortem (PM) inspection

OTF-S incidents are triggered by reactors to the skin test (or IFN-γ test-positive animals), but without subsequent detection of TB lesions or positive PCR test (or culture) results in any of those animals.

Incidents on Approved Finishing Units (AFUs) have been excluded from the figures and statistical parameters presented in this report due to the limited epidemiological impact of TB detections in such units. This exclusion may generate small discrepancies with incident numbers found in previous annual reports.

Cattle industry

There were 440 cattle herds registered (in Sam) in Buckinghamshire at the end of the year (31 December) as summarised in Appendix 1.

Sam includes herd type and herd size, with size based on a herd's most recent test or when the herd was first registered. In this report herd size is generated for a point in time (31 December) from the number of on and off movements of cattle in the Cattle Tracing system (CTS) data accessible via the RADAR data warehouse providing more recent description of the herd size at a point in time.

Further details on the data sources used in these reports can be found in the explanatory supplement for the annual reports 2025.

Appendix 2 provides a summary of headline cattle TB statistics in Buckinghamshire.

There were no livestock markets in Buckinghamshire in 2025 approved by APHA to hold slaughter gatherings of cattle from OTF herds that are eligible for, but have not been subjected to, pre-movement TB testing (known as 'TB pre-movement testing-exempt' markets).

Many cattle farms purchase cattle through Thame Market in Oxfordshire located near the border with Buckinghamshire, channelling animals into Buckinghamshire from the Edge Area, Low Risk Area (LRA), and from the High Risk Area (HRA) counties with more abundant cattle.

In Buckinghamshire there were 6 AFUs active during 2025, all of which were still in operation at the end of the reporting period. No new incidents were reported in those AFUs, but 4 had an ongoing incident at the end of 2025.

In 2025 there were 369 beef herds, 53 dairy herds, and 11 other herds active on the 31 December (Appendix 1).

Over the past decade in Buckinghamshire, the number of beef herds in the smallest size category (1 to 50 animals) has steadily and markedly declined. Despite this reduction, these smaller herds continue to represent the most common type of beef enterprise in the county. Larger beef herds (>51 animals) have consistently been less frequent, yet their numbers have remained relatively stable over the same period (Figure 1).

The relatively smaller number of dairy herds in Buckinghamshire has remained fairly consistent in size composition over the last 10 years (Figure 1).

The number of herds in the ‘Other’ production type category have remained few in numbers and consistent over time (Appendix 1, Table 2). This category includes a range of herd types not limited to mixed herds, dealers, specialist breeders and non-standard holdings.

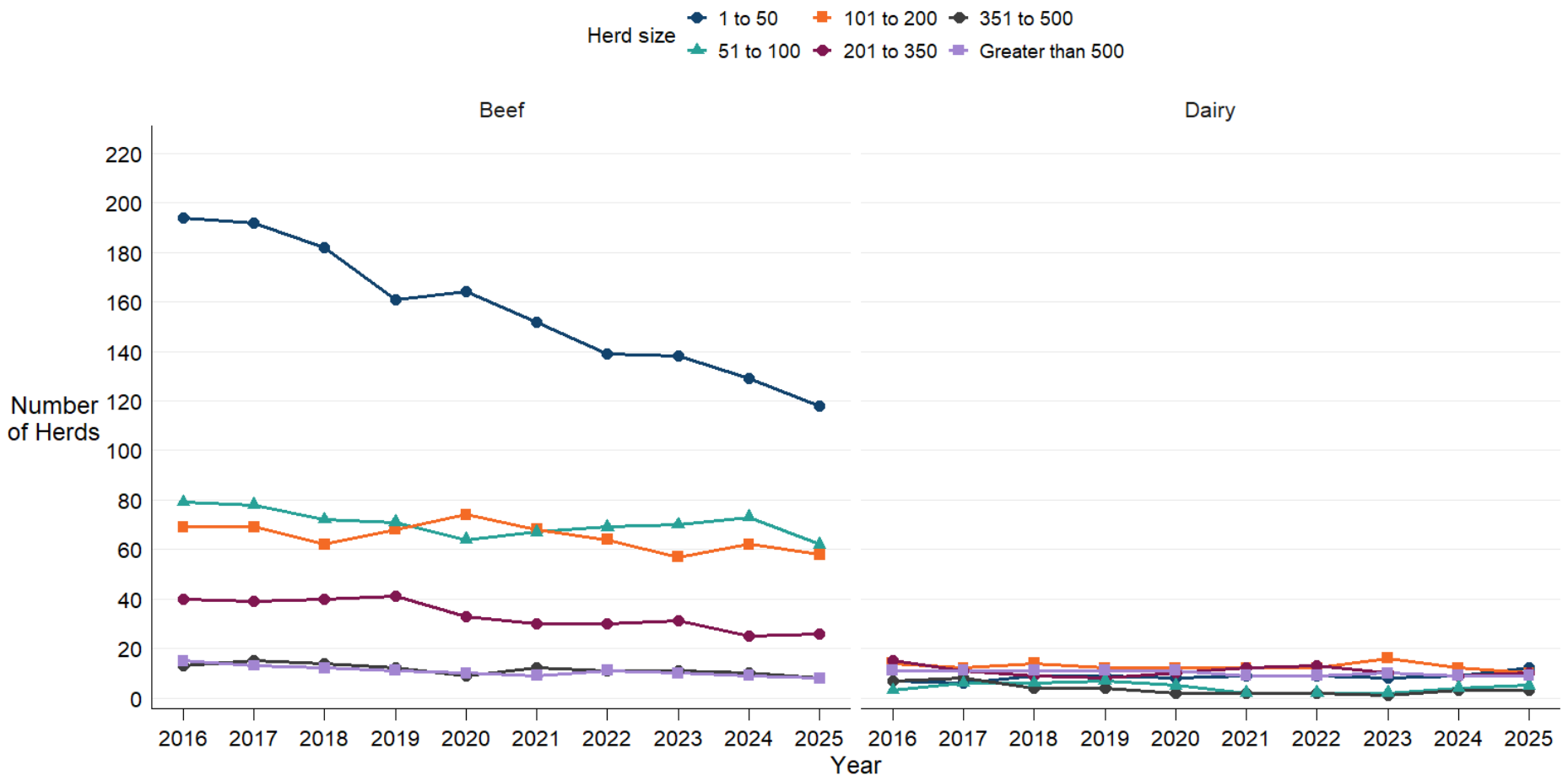


Figure 1: Number of herds with ≥1 animal on the last day of the reporting year in Buckinghamshire by herd size and herd type (dairy and beef), between 2016 to 2025.

Number of new TB incidents

In 2025, 32 new TB herd incidents were declared in the whole county, 20 OTF-W and 12 OTF-S, a decrease of 9 (22%) compared to 2024 (41), the highest annual number recorded between 2016 and 2025 (Figure 2).

The number of OTF-W incidents dropped marginally from 21 in 2024 to 20 in 2025, whereas the number of OTF-S incidents almost halved compared to the previous year (from 20 in 2024 to 12 in 2025).

The proportion of new OTF-W incidents in 2025 was the second highest in the last decade, 63% in 2025 and 68% in 2023. Prior to 2023, this proportion was around 50% or below.

The annual number of OTF-W incidents reported in Buckinghamshire ranged between 4 and 21 in the 10-year period 2016-2025. Following a sharp increase from 4 in 2016 to 18 in 2017, there was a decline to 6 in 2018. In subsequent years, the number of OTF-W incidents fluctuated with small peaks in 2019 (12) and 2022 (15), before increasing to 21 in 2024.

Over the same period, the number of OTF-S incidents generally ranged between 10 and 20, except for 9 in 2016, 25 in 2018 and 6 in 2023.

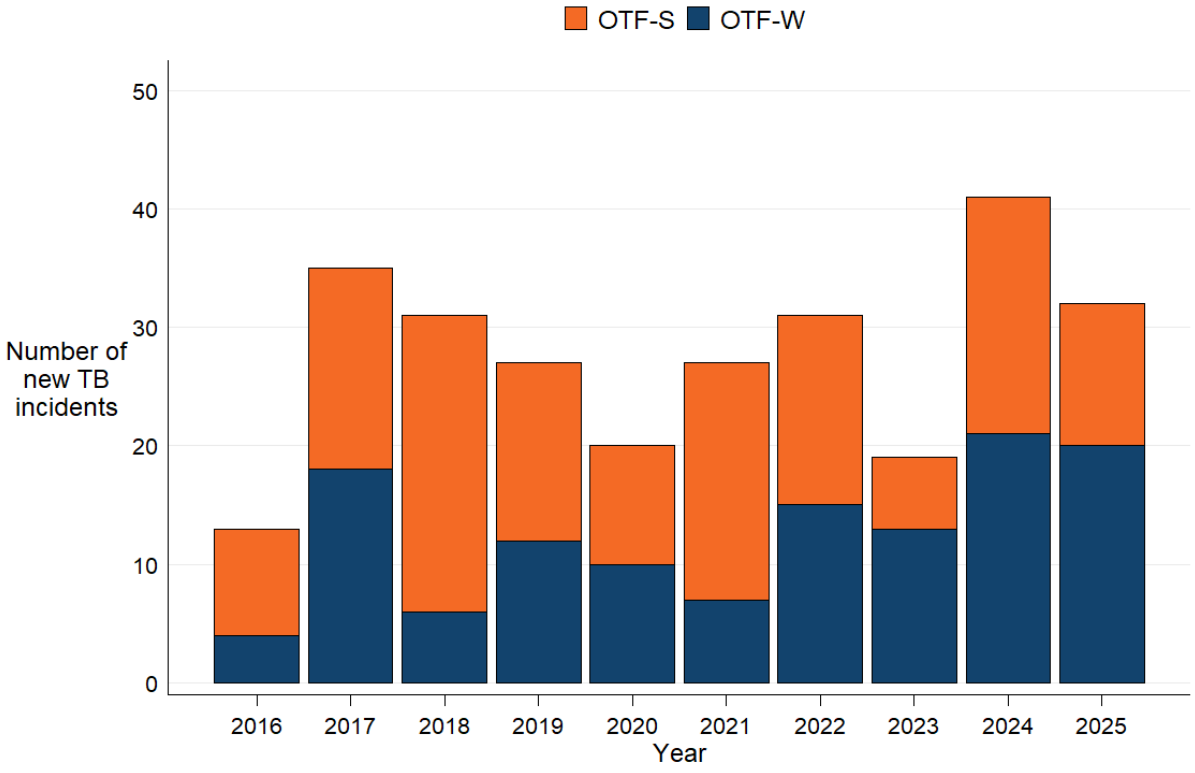


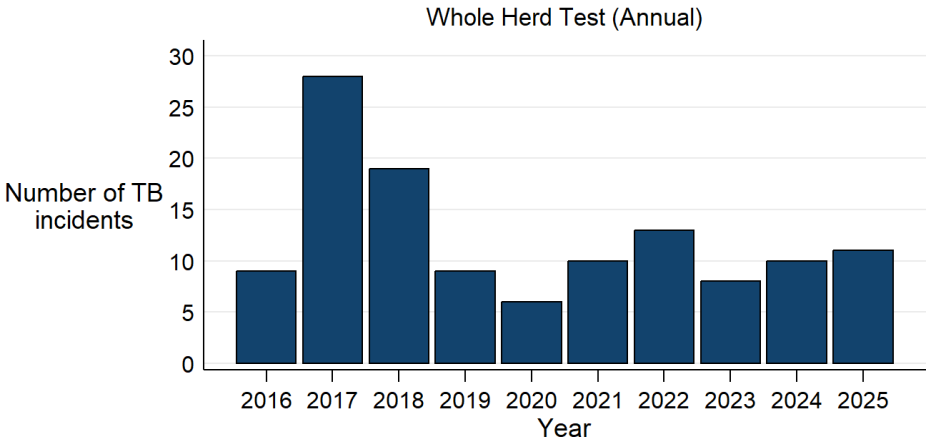
Figure 2: Annual number of new TB incidents in Buckinghamshire, from 2016 to 2025.

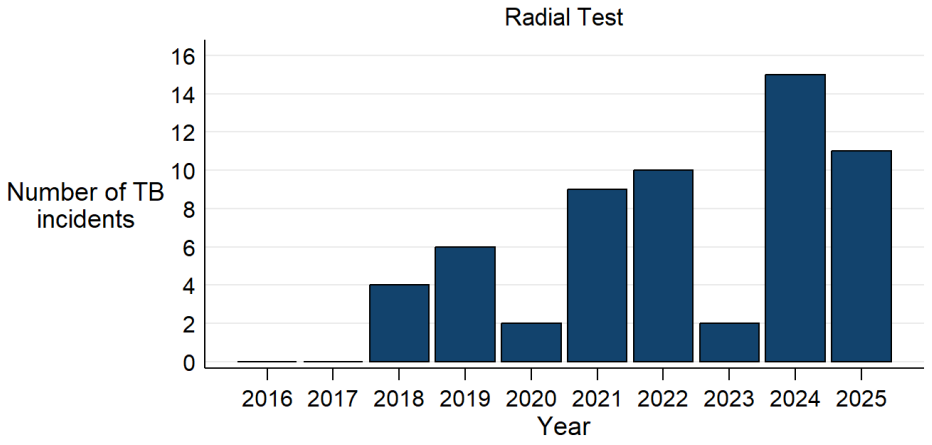
Disclosing TB surveillance method

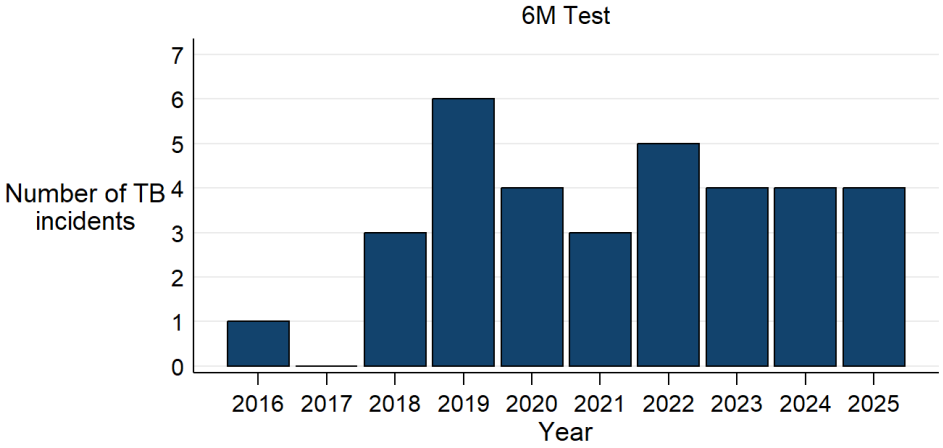
Over the 10-year period 2016-2025, radial (RAD) testing and annual whole herd testing typically detected the greatest proportion of new TB incidents in Buckinghamshire each accounting for 11 incidents (34%) of the 32 that began in 2025. This was followed by 6-month post-incident check tests (4, 13%), contiguous tests (3, 9%), and pre-movement tests (1, 3%) (Figure 3).

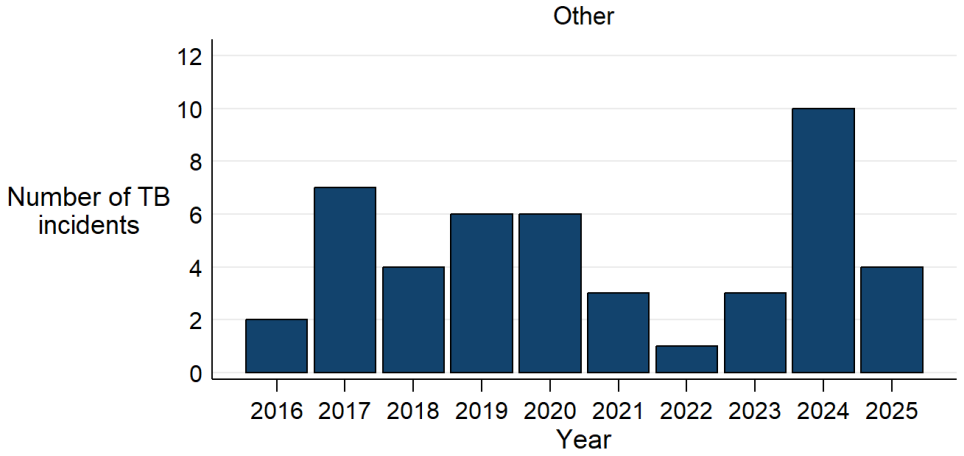
Slaughterhouse (SLH) surveillance detected 2 (6%) of new TB incidents in 2025 and this is explored further in the next section.

Radial testing in the annual TB surveillance portion of the Edge Area was replaced by contiguous herd testing in May 2025. This reduced the enhanced testing radius around each new OTF-W incident herd in the county from 3km to 1 km.


Whole Herd Test (Annual)
Number of TB incidents
0
5
10
15
20
25
30
2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Year


Radial Test
Number of TB incidents
0
2
4
6
8
10
12
14
16
2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Year


6M Test
Number of TB incidents
0
1
2
3
4
5
6
7
2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Year


Other
Number of TB incidents
0
2
4
6
8
10
12
2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Year

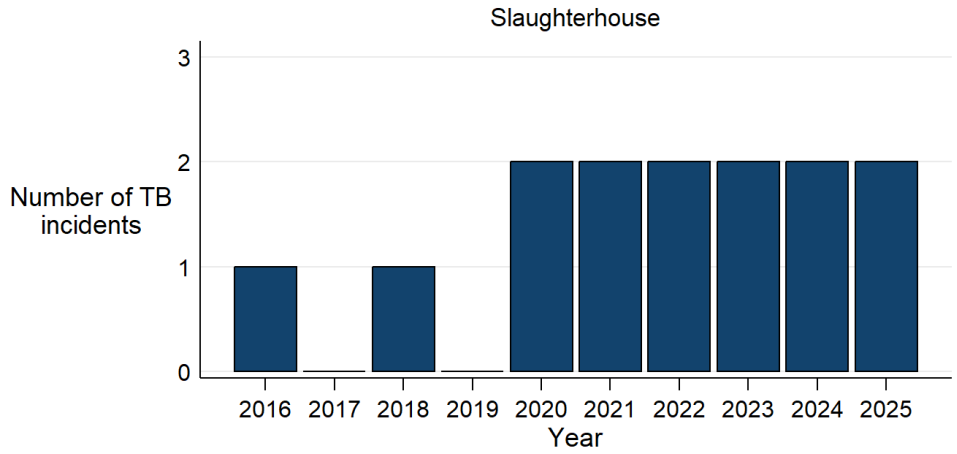


Figure 3: Bar charts showing number of TB incidents per disclosing test type or surveillance stream per year between 2016 and 2025. Categories with less than or equal to 5 incidents per year (namely, herd tests conducted 12 months after the conclusion of a TB incident (12M tests), new herd check tests, contiguous tests, check tests, pre-movement tests, tracing tests, hotspot tests and post-movement tests) are included in the 'Other' category.

Slaughterhouse surveillance

In 2025, there were 4 non-reactor cattle from 4 OTF herds with suspected tuberculous lesions detected at post-mortem meat inspection (PMMI), during commercial slaughter, and from which tissue samples were submitted to APHA for laboratory testing.

Of the 4 submissions in 2025, 2 (50%) were confirmed positive for M. bovis on real-time polymerase chain reaction (PCR) or culture. Since 2016, the total number of cattle with suspected tuberculous lesions detected at PMMI from OTF herds ranged between 1 and 7. The annual proportion of M. bovis positive slaughterhouse case submissions from OTF herds in Buckinghamshire fluctuated over the last decade, decreasing from 20% in 2016 to 0% from 2017 to 2019 before increasing to 100% in 2021. This was followed by a steady decrease to 33% in both 2023 and 2024 then increased to 50% in 2025.

These slaughterhouse surveillance detections resulted in a total of 2 new OTF-W TB incidents in Buckinghamshire in 2025 and accounted for 6% of all new TB incidents in 2025, which was similar to previous years and highlights the importance of slaughterhouse surveillance. The tuberculin skin test, despite being the internationally recognised gold standard for ante mortem diagnosis of TB, has an imperfect sensitivity and is performed at set intervals (specific time points), and so will not detect all infected cattle tested. Thus, ongoing TB surveillance at the slaughterhouse between skin herd tests, carried out by abattoir veterinarians, act as a critical backstop in the detection and eradication of TB.

Six further slaughterhouse case submissions were received from 4 herds already under TB incident restrictions in 2025. Since 2016, the total number of cattle with suspected tuberculosis lesions detected at PMMI from herds already experiencing a TB incident has remained very low, with only 1 in 2024, 5 in 2025, and 0 in the previous 8 years. In 2025, 3 (50%) of cattle were positive for M. bovis on PCR or culture, and in 2024 one animal tested positive (100%).

Duration of TB incidents

Of the 44 TB incidents that were resolved in Buckinghamshire in 2025, 14 had started in 2025, 28 in 2024 and 2 in 2022. Of those 44 incidents, 28 were OTF-W and 3 of those were resolved within 101 to 150 days, 11 were resolved within 151 to 240 days, and 12 incidents lasted between 241 and 550 days. The remaining 2 incidents were categorised as persistent (lasted more than 550 days), compared to one persistent incident resolved in 2024 (Figure 4).

Of the remaining 16 OTF-S incidents that ended in 2025, 12 were resolved within 151 to 240 days and 4 lasted between 241 and 550 days.

There were 21 incidents ongoing at the end of 2025, of which 18 began in 2025 and 3 in 2024. None of those incidents were persistent. This was less than the previous year with 33 incidents ongoing at the end of 2024, 2 of which were persistent.

Figure 4 shows the 5-year trend in the duration of TB incidents which closed per year. The median duration of incidents in Buckinghamshire decreased from 230 days in 2021 to 190.5 days in 2022. This was followed by an increase to 249 days in 2023, then a decrease again in 2024 (187.5 days). The median duration increased again in 2025 to 207 days (Interquartile Range = 170.3 to 267.8). Buckinghamshire had the fifth highest median duration in the 11 Edge Area counties, and this was also higher than all 11 HRA counties. The median duration presented in previous years may differ in this report as AFUs have been excluded from the data in this report.

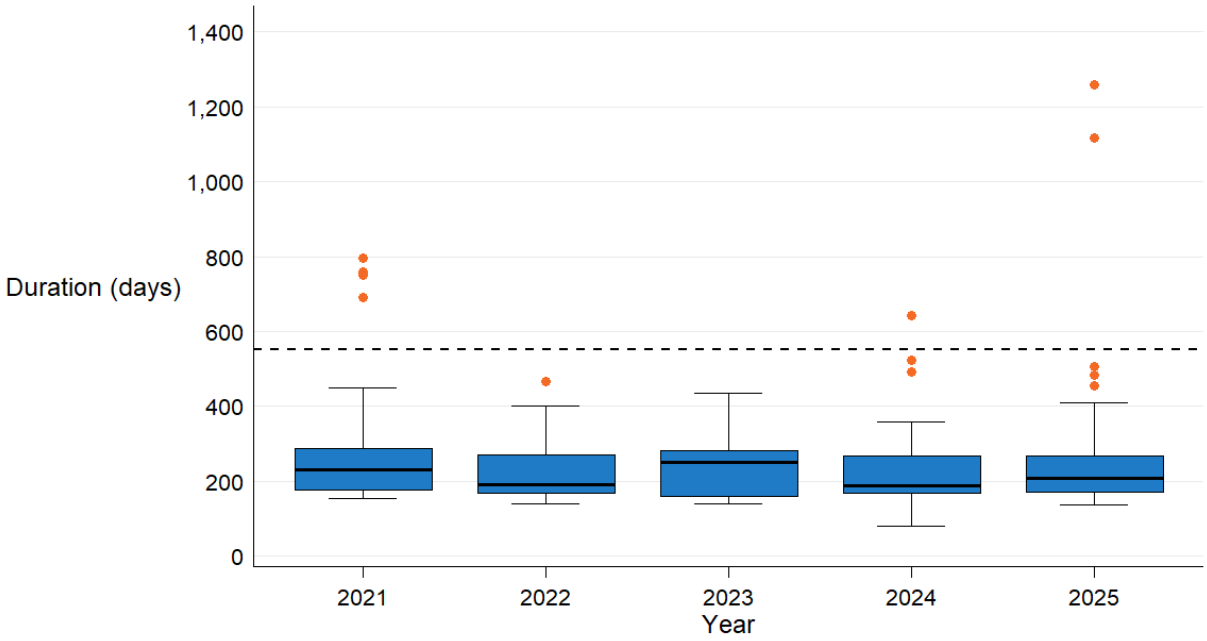


Figure 4: Box plots showing the duration of resolved TB incidents in days by year (2021 to 2025).

Figure 4 description: In each boxplot, the central line represents the median duration. The lower and upper boundaries of the box correspond to the 25th percentile (January to March) and 75th percentile (July to September), respectively, thereby capturing the interquartile range (IQR). The whiskers extend to the lowest and highest observed values within 1.5 times the IQR below January and March and above July and September. Observations falling outside this range are plotted individually as points and could be considered outliers. The black horizontal dashed line shows the cut-off for incidents that are deemed persistent (lasted for more than 550 days).

Incidence of TB

During 2025, the 12-month smoothed herd incidence rate ranged from 10.8 to 12.1 incidents per 100 herd years at risk (HYR), the highest incidence rate recorded in the county in the last 10 years. The rate at the end of 2025 (Q4) was 11.1 incidents per 100 HYR, the 3rd highest rate among the 11 counties in the Edge Area, and higher than the overall incidence rate for the Edge Area in 2025 (6.8 incidents per 100 HYR), as shown in Figure 5. The incidence rate was also higher than 4 High Risk Area (HRA) counties, but lower than the whole HRA (12.0).

Over the 10-year period of interest, the incidence rate in Buckinghamshire increased from 3.4 at the start of 2016 to 12.1 in Q1 2025. It was 7.7 at the end of 2017, then dropped to 5.9 in Q2 of 2018 before climbing again to 6.9 at the end of the year. This was followed by a steady decline to 5.4 at the end of 2020 then an increase to 8.8 at the start of 2022. The incidence rate then fluctuated between 5.8 and 8.8 then increased to a peak of 12.1 at the start of 2025.

There was a steady increase in the overall incidence rate in the Edge Area from 5.4 in early 2016 to 10.5 at the start of 2021. The incidence then declined to 7.0 at the start of 2023, followed by a relatively stable period, with a minor increase to 7.4 in Q2 of 2025 before declining again.

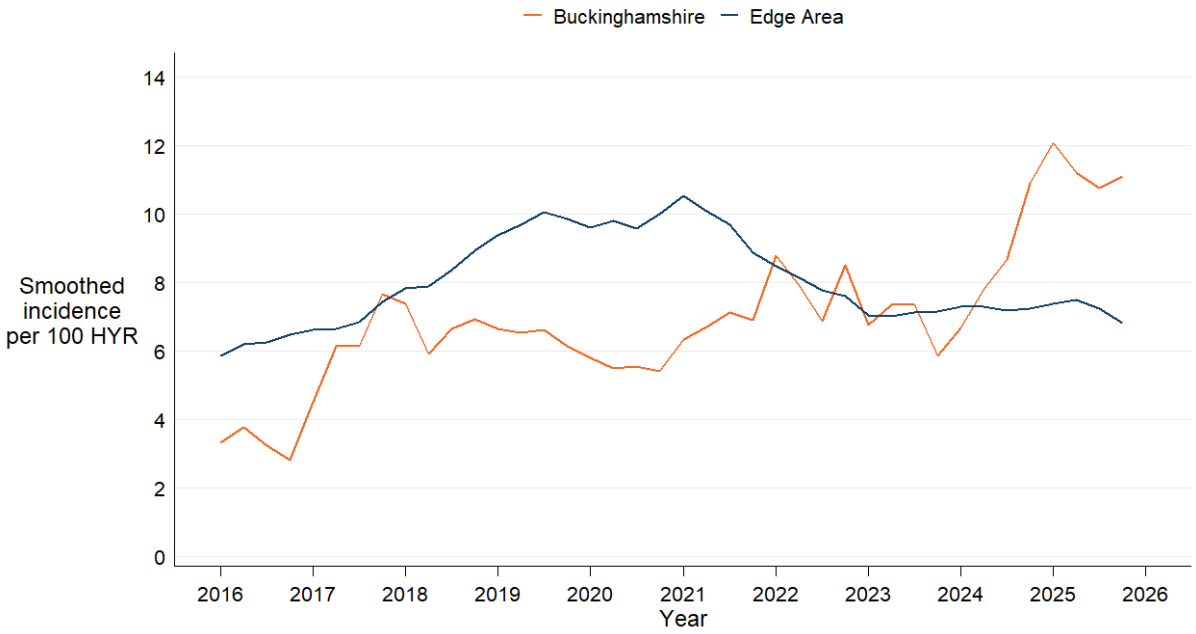


Figure 5: 12-month smoothed quarterly incidence rate per 100 herd-years at risk for all new incidents (OTF-W and OTF-S) in Buckinghamshire and the Edge Area, from 2016 to 2025.

Prevalence of TB

The monthly herd prevalence rose steadily from 1.6% at the start of 2016 to 2.7% then decreased to 0.7% at the end of the year. This was followed by an increase to 4.8% in the middle of 2017 then ranged between 3.5% and 4%, until it dropped to 3.1% towards the end of 2020. This was followed by a rise to 4.1% at the end of 2021, which plateaued until mid-2022. The values then fluctuated between 3.4% and 4.2% until a large increase beginning at the end of 2024 and peaking at 6.9% at the end of 2025. In the last 2 months of 2025, the monthly herd prevalence decreased slightly to 6.7% (Figure 6).

Prior to 2022, the monthly herd prevalence in Buckinghamshire was lower than that for the whole Edge Area, except in mid-2018. Since 2022, the monthly herd prevalence in Buckinghamshire was mostly much higher than the overall value for the whole Edge Area, particularly since mid-2024.

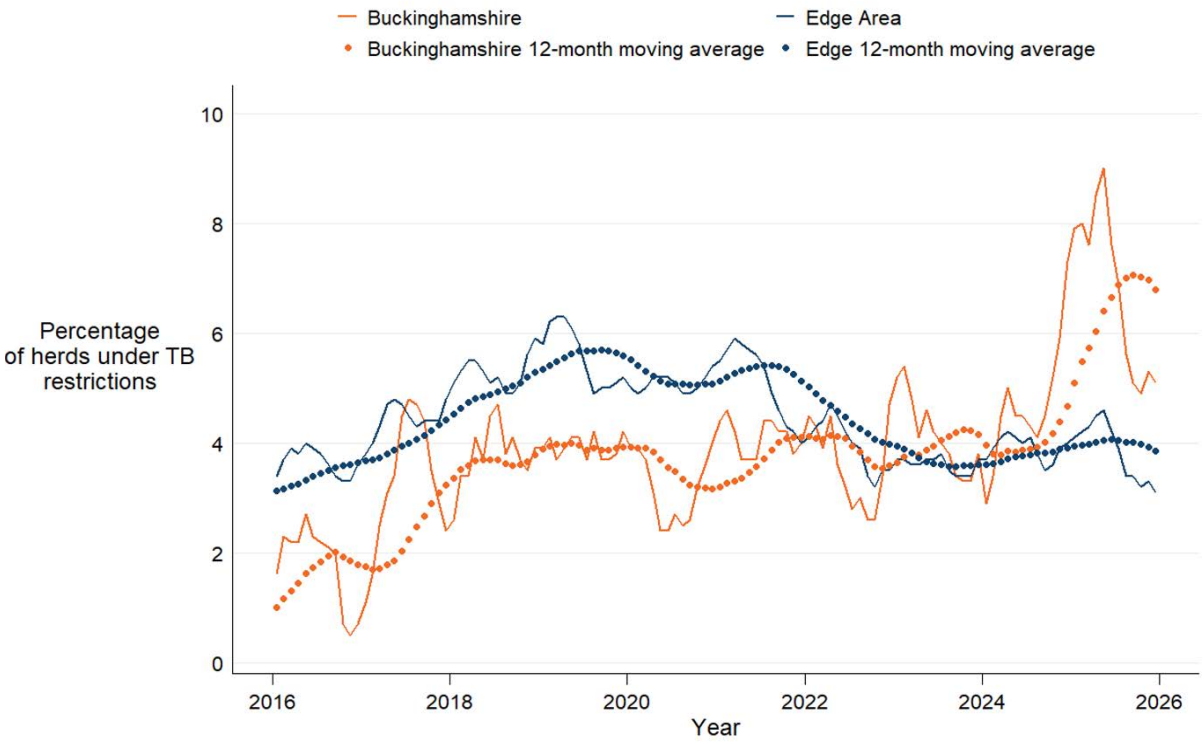


Figure 6: Mid-monthly 12-month moving average of herd prevalence (proportion of live herds under TB movement restrictions due to a TB incident) in Buckinghamshire and in the Edge Area overall, from 2016 to 2025.

Skin test reactors and interferon gamma test-positive animals removed

A total of 388 cattle were compulsorily removed from TB incident herds in Buckinghamshire during 2025, as skin test reactors (193) or IFN-γ test positive animals (195) (Figure 7). Animals that were both skin test reactors and IFN-γ test positive are counted in this report as skin test reactors. This was a 25% increase from 290 total reactors slaughtered in 2024, and the highest annual number of cattle removed in the 10 years. This was driven by an increase in both skin test reactors and IFN-γ test positive animals.

The annual number of skin test reactors tripled from 30 in 2016 to 92 in 2018, then fluctuated, ranging between 75 and 101 until increasing from 115 in 2023 to 193 in 2025.

There was a four-fold increase in the number of IFN-γ test positive animals removed from 43 in 2016 to 191 in 2018, followed by a decrease to 53 in 2022. The figure grew to 130 in 2023, then dropped slightly to 116 in 2024, and finally rose by 41% to 195 in 2025.

In 2025, there were 4,037 IFN-γ tests carried out, a 36% increase compared to 2024 (2,584), but similar to 2023 (4,044). Prior to 2023, the number of IFN-γ tests performed annually in the county ranged between 1,833 and 3,502.

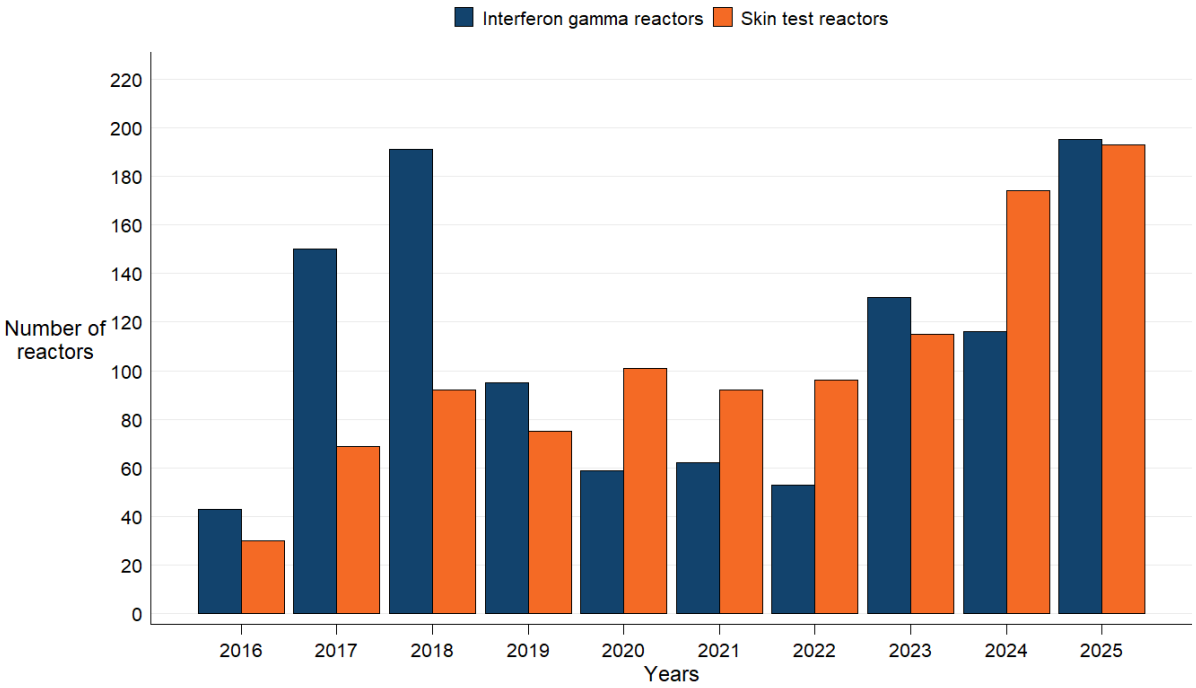


Figure 7: Annual number of skin test reactors and IFN-γ test positive cattle removed by APHA for TB control reasons in Buckinghamshire, from 2016 to 2025.

Recurrent TB incidents

Three-year recurrence

A new herd incident in 2025 was defined as recurrent if the affected herd had also experienced another TB incident in the 3 years preceding the disclosing test.

Of the 32 herds in Buckinghamshire with a new TB incident in 2025, 16 (50%) had experienced another TB incident in the previous 3 years (Figure 8). This was the highest proportion of recurrent herd incidents recorded in the county since 2021. Recurrence in Buckinghamshire in 2025 was the thirteenth highest of the Edge Area/HRA counties, and higher than the average for the Edge Area (46%).

Of the 20 herds in Buckinghamshire with a new OTF-W incident in 2025, 10 (50%) had experienced another TB incident in the previous 3 years. While recurrence in OTF-W incidents had increased in 2023 (61.5%) and 2024 (61.9%), recurrence in OTF-S incidents in 2025 was higher than the previous 4 years. Of the 12 herds with a new OTF-S TB incident, 6 (50%) had experienced another TB incident in the previous 3 years. Prior to 2025, recurrence in OTF-S incidents fluctuated around 30% except in 2023 when it dropped to 16.7%.

The overall 3-year recurrence in the Edge Area increased from 46% in 2021 to 51% in 2023 and then dropped to 47% in 2024 and 46% in 2025.

One of the herds in Buckinghamshire with a recurrent OTF-S incident in 2025 was in Hotspot 30 (HS30).

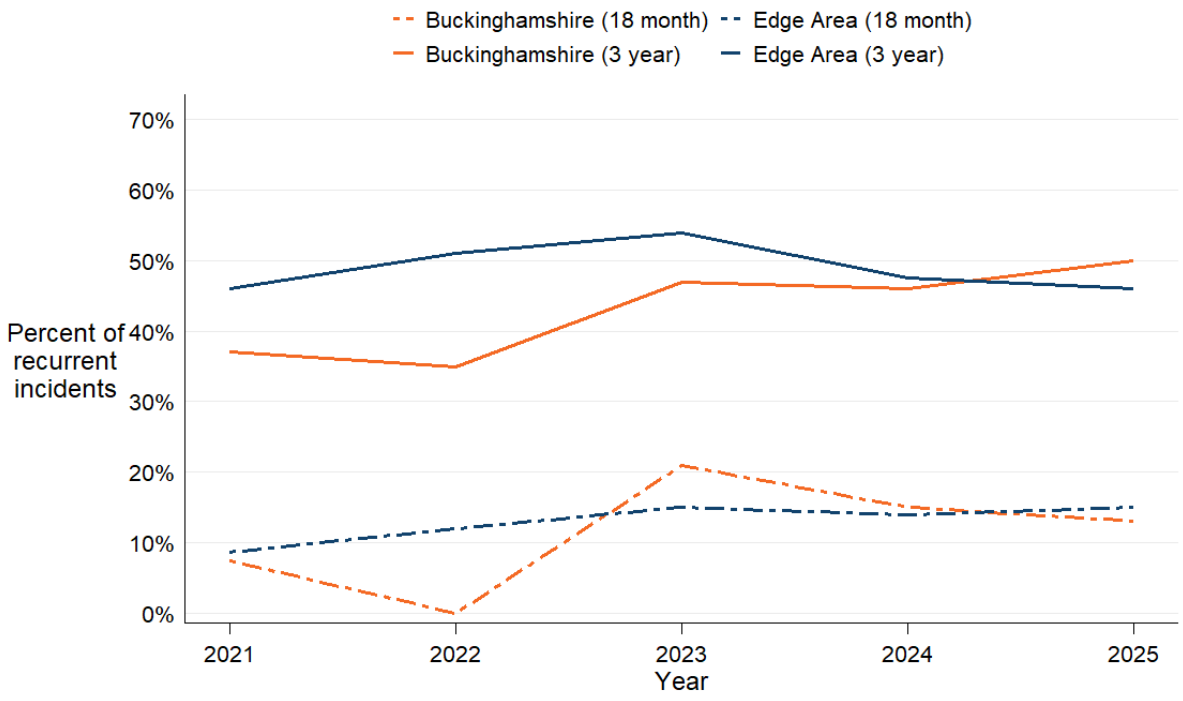


Figure 8: Annual proportion of herds with a new TB incident in Buckinghamshire in 2025 that experienced another TB incident in the previous 18 months or 3 years of the disclosing test.

In 2025, of all the Edge Area counties, Buckinghamshire had the fourth highest proportion of TB incidents in herds that had experienced another incident over the previous 18-months (12.5%). This was lower than the overall figure for the Edge Area (14.6%). The 18-month recurrence decreased from 7.4% in 2021 to 0.0% in 2022 then increased to 21.1% in 2023 and dropped again to 14.6% in 2024.

The overall 18-month recurrence in the Edge Area counties increased from 8.6% in 2021 to 14.9% in 2023, then decreased to 14% in 2024 and rose slightly to 14.6% in 2025 (Figure 8).

Geographical distribution of TB incidents

Consistent with previous years, most OTF-W incidents declared in the county in 2025 were caused by infection with Whole Genome Sequencing (WGS) clade B6-62 of M. bovis in the north and west of the county, where cattle density is highest (Figure 9, Figure 11). Additionally, more incidents involving clade B6-11 were identified in 2025 in the centre-east of the county.

North

A large number of new OTF-W incidents with clade B6-62 were detected in the north-west of the county towards the borders with Northamptonshire and Oxfordshire, which extended towards the centre of the county near Winslow (Figure 9) (Akeley Cluster). M. bovis infection has become endemic in this area since 2023 (Figure 10). However, there is evidence of geographic spread further south near Winslow (Figure 10). Incidents 274 and 790 had medium cattle movement source of infection risk identified in the Cattle Movement Algorithm (CMA), whereas the cattle movement source of infection risk for incidents 224, 853, 101, 536 and 289 was low or very low.

There were 2 OTF-W incidents in the north-east of the county where the density of cattle herds is lower, one near Milton Keynes (incident 549) and one near Olney (incident 276). There were also 3 new OTF-S incidents reported in this part of the county (incidents 606, 605 and 835). The 2 OTF-W incidents were caused by clade B6-62 of M. bovis and were closely related through WGS to incidents in Akeley cluster. As shown on Figure 10, this is a new area of spread eastwards since 2023 and 2024. No new TB incidents were detected in the north-east of the county until 2024 when there was one OTF-W incident with clade B6-83 and one OTF-S incident disclosed. In 2025, incident 276 had a low/very low cattle movement source of infection risk identified in the CMA, whereas incident 549 had a high/very high cattle movement source of infection risk identified.

One new OTF-W incident linked to infection with clade B6-62 was detected to the east of Bicester (incident 640), with a low/very low cattle movement source of infection risk according to the CMA. Three OTF-S incidents were disclosed nearby in 2025 (incidents 824, 848 and 268).

One wild deer carcase in the north-west of the county near the border with Northamptonshire was found to be infected with clade B6-62 of M. bovis. This deer isolate of the bacterium was closely related to that found in a nearby cattle incident in 2025 (224), suggesting spillover into wildlife.

West

There were 2 new OTF-W incidents and 2 OTF-S incidents (incidents 298 and 637) in the west of the county north of Thame. One OTF-W incident was caused by clade B6-62 (incident 685) and had a medium cattle movement source of infection risk identified by the CMA, However, the initial veterinary DRF assessment identified cattle movements as only a possible source of infection, while the data-driven source attribution outputs indicated that the infection pathway was unclear (Figures 12, 13). This area remained endemic, with new OTF-W incidents caused by this WGS clade continuously occurring each year since 2022 (Figure 10). Another OTF-W incident was detected in 2025 and associated with clade B6-85 and had high cattle movement source of infection risk identified by the CMA.

East

Towards the east and centre of the county, there was a cluster of new OTF-W incidents associated with clade B6-11 and one with clade B6-62 (Figure 9). This is an area of new spread since 2023 and 2024 (Figure 10).

Incidents 333 and 633 both were both associated with a medium cattle movement source of infection risk from the Cattle Movement Algorithm (CMA) and their M. bovis isolates were genetically closely related through WGS analysis. There was also one incident detected in this area with an undetermined clade (incident 810) and one OTF-S incident (incident 574).

Incident 78 (Clade B6-62) had a medium cattle movement source of infection risk according to the CMA, whereas incident 673 (Clade B6-11) had a low/very low cattle movement source of infection risk identified.

There was one new OTF-W incident north of the HS30 boundary (incident 209) and one within the hotspot (incident 380). Incident 209 was associated with a low/very low cattle movement source of infection risk in the CMA whereas incident 380 had a medium cattle movement source of infection risk identified. Both incidents were caused by infection with clade B6-11 of M. bovis, closely related through WGS, and genetically distinct from the cluster of B6-62 isolates normally associated with HS30 incidents.

South

One OTF-W incident was disclosed further south along the border with Oxfordshire (incident 821), which was due to infection with clade B6-62 of M. bovis and considered to be part of the Oxfordshire/Chinnor Cluster.

Although not considered an endemic bTB area, new incidents have occurred in the south of the county sporadically in recent years. There were 2 new OTF-S incidents

detected in 2025, one near Maidenhead (incident 42), and one further east near the border with Greater London (incident 400).

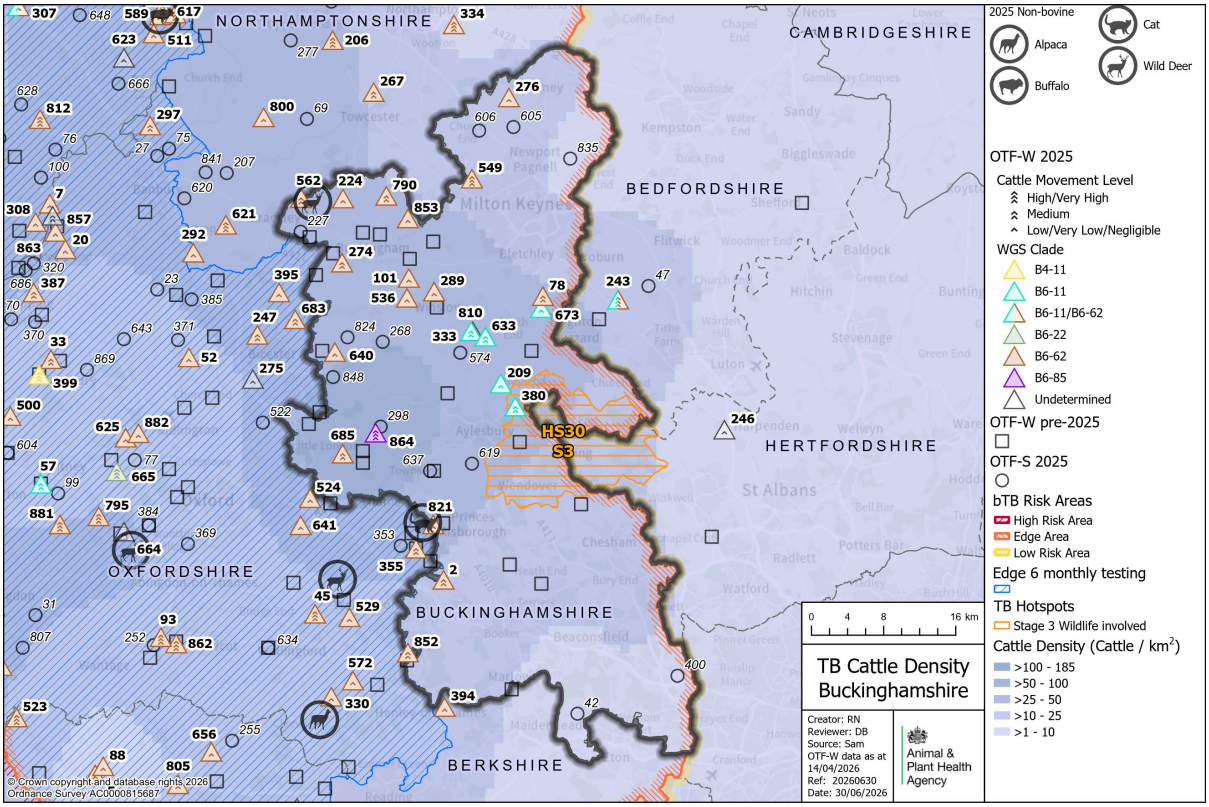


Figure 9: Location of cattle holdings in Buckinghamshire with new TB incidents (OTF-W and OTF-S) in 2025, and cattle holdings with pre-2025 OTF-W incidents still ongoing at the beginning of 2025, overlaid on a cattle density map (as in 2024).

Figure 9 description: A map of Buckinghamshire and adjoining areas showing the cattle density, the geographical location of cattle holdings with new TB incidents (OTF-W shown as triangles and OTF-S shown as circles) in 2025, and cattle incident holdings with OTF-W incidents still ongoing at the beginning of 2025, shown as squares. The 2025 OTF-W incidents are coloured by WGS clade. Mustard yellow represents clade B4-11, light green represents clade B6-11, half light green and half light brown represents clade B6-11/B6-62, light blue represents clade B6-22, light brown represents clade B6-62, dark purple represents clade B6-85, and transparent triangles represent incidents where the WGS clade was undetermined. Dark blue areas represent higher cattle density and light blue represent lower cattle density. The only active TB hotspot area in Buckinghamshire (HS30) is shown with hashed lines straddling the East Buckinghamshire and West Hertfordshire border. The colour of the hotspot, along with its suffix indicates the stage of controls in place in 2025: light orange is stage 3 (S3 is wildlife involved). The locations of new TB incidents are described in the main text.

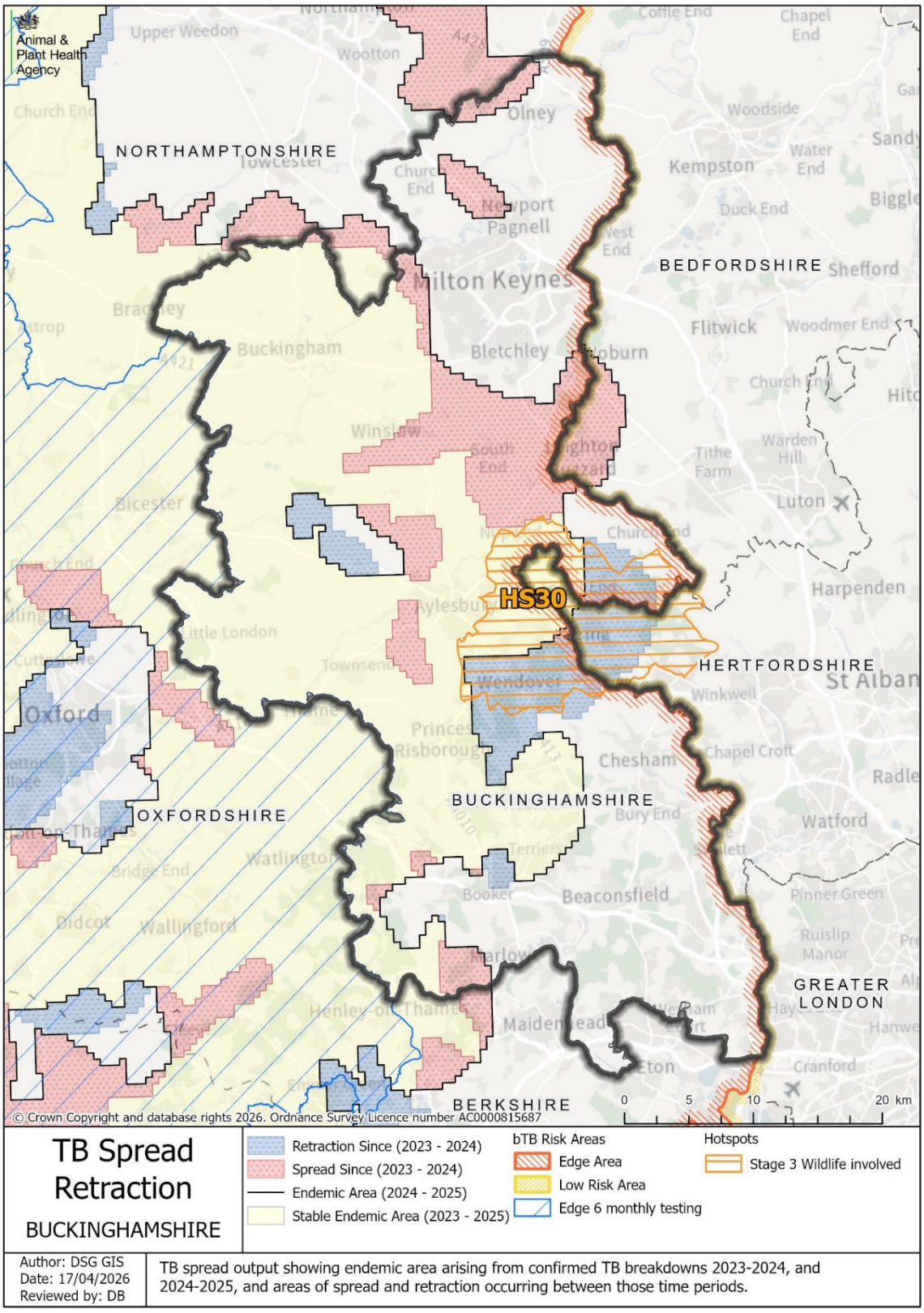


Figure 10: Map displaying the spread (pink shading) and retraction (blue shading) of the endemic bovine TB area (yellow shading) of Buckinghamshire and its adjoining counties between January 2022 to 2024 and January 2023 to 2025. The colour of the hotspot, along with its suffix, indicates the stage of controls in place in 2025: light orange is stage 3 (S3 is wildlife involved).

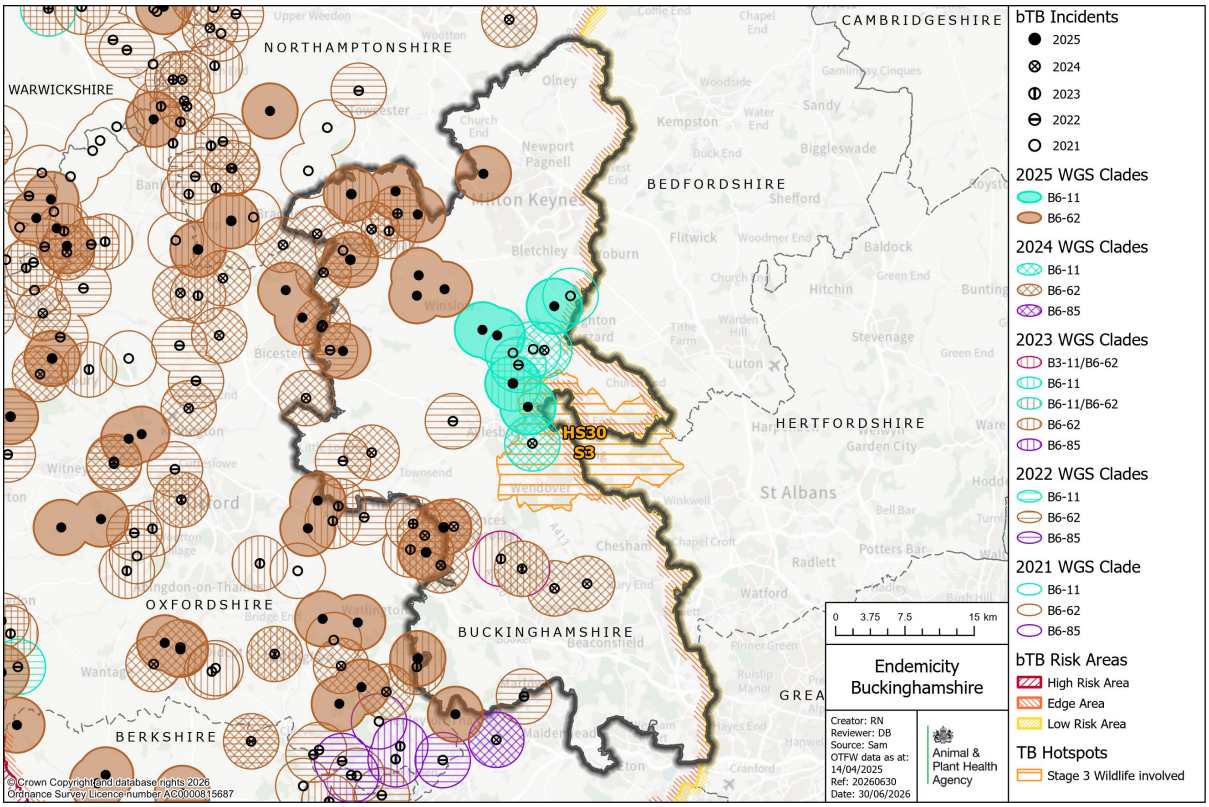


Figure 11: WGS clades of M. bovis detected in Buckinghamshire and surrounding Edge Area counties between 2020 and 2025, where the WGS clade identified in the infected herd was within 3 Single Nucleotide Polymorphisms (SNPs) of another TB incident that was within 9km and occurred in the previous 4 years or 6 months after the incident of interest, with a 3km buffer zone around each incident.

Figure 11 description: Map of Buckinghamshire and adjoining areas showing the location of TB incidents with a WGS clade where a local transmission event was identified. Clades are shown as circles on the map with each clade represented by a different colour. The year from which the clade was identified is shown a solid colour (for 2025) or different types of hash (for 2021 to 2024). Green represents WGS clade B6-11, blue represents B1-11 and brown represents B6-62. The colour of the hotspot, along with its suffix, indicates the stage of controls in place in 2025: light orange is stage 3 (S3 is wildlife involved).

Over the past decade, most new TB incidents in Buckinghamshire were found in the north-west of the county, where cattle density is highest. However, in the last 5 years, TB incidents have spread towards east and centre of the county, including a hotspot in the east of the county straddling the boundary with Hertfordshire in the LRA (HS30).

Since 2020, additional information provided by WGS has enabled the identification of emerging clusters around the county and their progression. These clusters provide evidence of local spread and, where local cattle purchases have not occurred, they are most likely associated with infected wildlife.

In the north-west of the county, evidence points to clusters of infection with clade B6-62, which are sometimes overlapping and fluctuate year by year. This indicates locally driven infection from multiple sources occurring simultaneously. This pattern is also emerging in the rest of the county, where WGS clades (B6-62 and B6-11) are now established.

As in previous years, most OTF-W incidents across the county in 2025 were caused by infection with WGS clade B6-62 in the north and west of the county. Additionally, more incidents involving clade B6-11 were identified in 2025 in the centre-east of the county.

Non-bovine livestock

There were no TB incidents in non-bovine livestock in Buckinghamshire in 2025.

Main risk pathways and key drivers for TB infection

Disease Report Forms

In 2025, 20 out of 32 (63%) new TB incidents in Buckinghamshire received a preliminary or final APHA veterinary investigation (Disease Report Form or 'DRF') to identify the likely sources of infection for the affected cattle herds. The top 3 possible drivers of new TB incidents detected in the county in 2025 are listed below, and the tabulated summary of identified risk pathways from these investigations and the subsequent calculated weighted contribution are given in Appendix 3.

Details of the protocol used for these investigations, and the subsequent methodology used to calculate the weighted contribution of the different suspected sources of M. bovis infection can be found in the explanatory supplement for the annual reports 2025.

The top 3 possible drivers of the occurrence of TB in cattle in Buckinghamshire during 2025 were:

- exposure to infected badgers
- movements of undetected infected cattle
- residual cattle infection

The infection risk pathway for new incident herds in 2025 with the highest calculated weighted contribution based on APHA veterinary investigations is potential exposure to infected badgers, (53.5% Appendix 3). This was higher compared to previous years, 2024 (43.6%) and 2023 (41.5%).

The movement of undetected, infected cattle into (and within) the county has a weighted contribution of 18.4%, which was lower than in the previous year (24.9% in 2024).

Residual cattle infection has a weighted contribution of 8.4%, lower than the year before (14.8% in 2024).

Data driven methods for source attribution

It is not always possible for a veterinary investigation to be carried out for every new TB incident. Therefore, new data-driven methods to quantify the likelihood of risk pathways for TB infected herds have been developed by APHA to supplement the information gathered through the DRFs, which include:

- the Cattle Movement Algorithm (CMA), which assesses the likelihood (from negligible to very high) that infection may have been introduced through the movement of undetected infected cattle into a herd
- the Residual Infection Algorithm (RIA), which assesses the likelihood of residual infection remaining within a herd from a previous incident, and
- the Local Infection Indicator (LII), which identifies evidence of local transmission by comparing M. bovis WGS data from incident herds with genetically related isolates occurring within defined spatial and temporal windows

More detail on the methodology used can be found in the explanatory supplement for the annual reports 2025.

There is always a degree of uncertainty when identifying the most likely route by which TB infection was introduced into a herd. Where no local transmission event has been identified through phylogenetic analysis of the WGS data for M. bovis isolates, and there is no strong evidence supporting either cattle movements or residual infection as the source of infection, these pathways cannot be ruled out.

WGS data was available for 19 (95%) of all new OTF-W TB incidents in Buckinghamshire in 2025, 59% of all new TB incidents. A local transmission event was identified by the LII where WGS data were available and another M. bovis isolate was identified that:

- was within a genetic distance of 3 single nucleotide polymorphisms (SNPs)
- which occurred within a 9km radius
- was detected within the previous 4 years or following 6 months after confirmation of the incident of interest

The closely related isolates may have originated from the same herd or a different local herd. It is important to note that failure to identify a local transmission event does not rule out local transmission, as detection depends on the availability of suitable WGS-derived isolates for comparison within the defined temporal and

spatial windows. Furthermore, the 9 km radius used is based on the main farm points registered to each herd and not all of the land parcels used by the cattle in the herd.

Nonetheless, when considered together, the evidence provided by the cattle movement algorithm (CMA), Residual infection algorithm (RIA) and Local infection indicator (LII) can provide valuable insights into the most likely infection pathways.

Figure 12 provides the number and percentage of herds in Buckinghamshire with new TB incidents (32) disclosed in 2025 where each combination of risk pathway indicators was identified. These are broadly categorised and described below, the relevant evidence evaluating algorithm is indicated in parentheses.

Cattle movements (mid pink, pale pink, Figure 12)

Introduction of infection through cattle movements was assessed as the most likely source of infection for two (6%) incidents in Buckinghamshire in 2025. Available evidence indicated:

- a high likelihood of cattle movements as the source of infection (CMA)
- a low likelihood of residual infection (RIA)
- no evidence of a local transmission event identified by WGS (LLI), or no WGS available (applicable to 1 OTF-S incident)

Residual infection (dark green, pale green, Figure 12)

Residual infection remaining undisclosed within the herd from a previous TB incident was assessed as the most likely source of infection for 5 (16%) incidents. Available evidence indicated:

- a high likelihood of residual infection (RIA)
- a low likelihood of cattle movements as a source of infection (CMA), and
- either strong evidence of a local transmission event identified by WGS, or no evidence of a local transmission event detected (LLI), or no WGS available (applicable to 3 OTF-S incidents)

Other local infection pathways, such as contiguous contact with infected cattle or direct or indirect contact with infected wildlife, cannot be completely ruled out for these incidents.

Local transmission pathways (darkest orange, Figure 12)

Other local transmission pathways, including direct or indirect contact with infected wildlife, contiguous contact with infected cattle, or indirect transmission via fomites, were assessed as the most likely infection pathways for 12 (38%) incidents. Available evidence indicated there was:

- strong evidence of a local transmission event identified by WGS (LLI)
- a low likelihood of residual infection (RIA), and

- a low likelihood of cattle movements as the source of infection (CMA)

This category does not include any OTF-S incidents as the LLI algorithm requires WGS.

Mixed evidence (darkest pink, Figure 12)

For one (3%) incident, the available evidence was consistent with multiple competing infection pathways and did not permit attribution to a single source of infection. Available evidence indicated there was:

- a low likelihood of residual infection (RIA)
- a high likelihood of cattle movements as the source of infection (CMA), and
- strong evidence of a local transmission event detected by WGS (LLI)

Limited evidence for assessed pathways (mid orange, pale orange, Figure 12)

For 12 (38%) incidents there was a low likelihood of, or no evidence to indicate, the assessed pathways. Available evidence indicated there was:

- a low likelihood of residual infection (RIA)
- a low likelihood of cattle movements as a source of infection (CMA)
- no evidence of a local transmission event (LLI), or no WGS data available (applicable to 8 OTF-S incidents and 1 OTF-W)

The CMA, RIA and LII outputs represent source attribution assessments based on the information available at the time the analyses were undertaken. Additional epidemiological, cattle movement and WGS data may become available subsequently and can alter the interpretation of individual incidents. Where later evidence informed a revised assessment, this is described in the 'Geographical distribution of incidents' section. As a result, the source attribution outputs shown in Figures 12 and 13 may not always align fully with the descriptions of individual incidents presented elsewhere in this report.

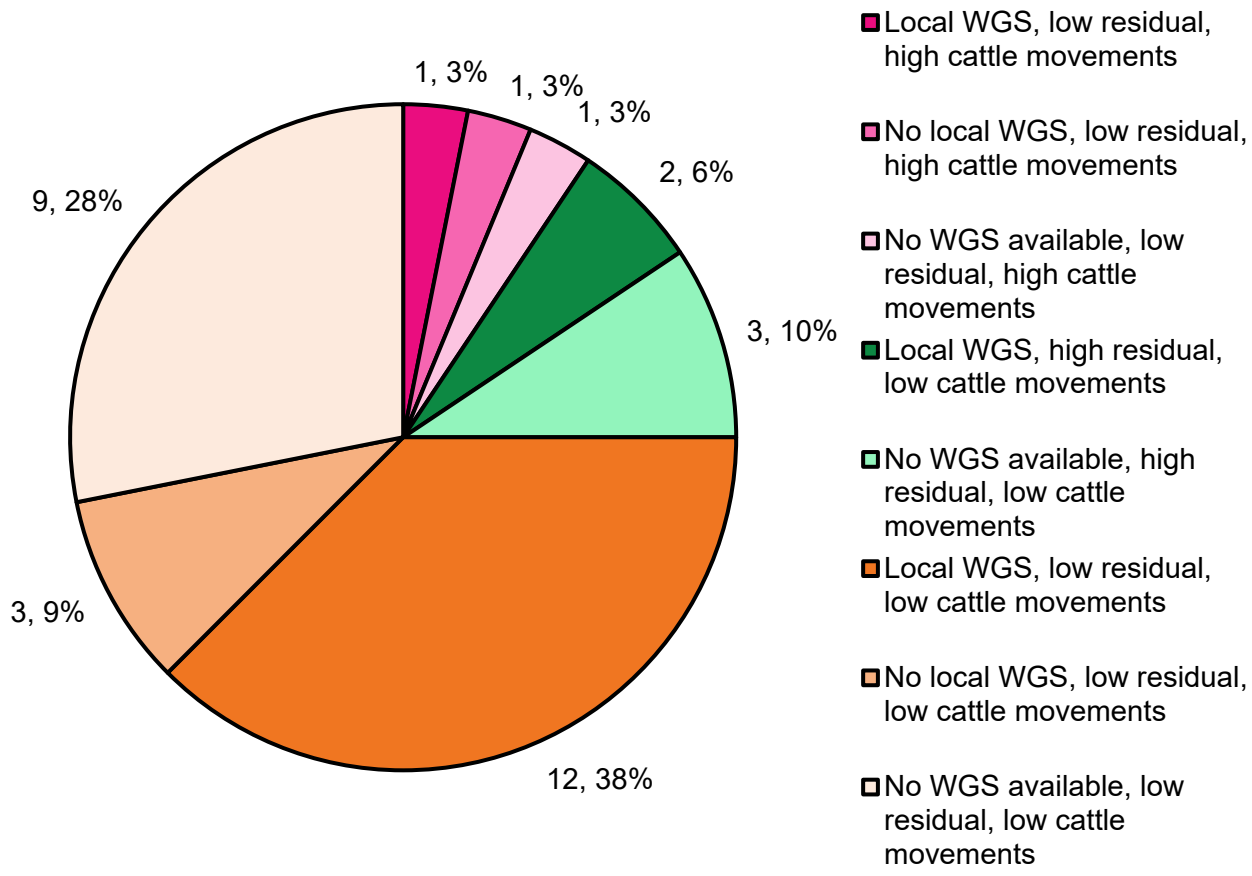


Figure 12: Pie chart showing the risk pathway combinations identified by the CMA, RIA and LII for all 32 new TB incidents starting in Buckinghamshire in 2025. Numbers presented outside each segment display the number of new TB incidents in 2025 in each segment and the percentage of the total new TB incidents in Buckinghamshire in 2025.

The spatial distribution of these the risk pathway combinations for new TB incidents in Buckinghamshire in 2025 is presented in Figure 13.

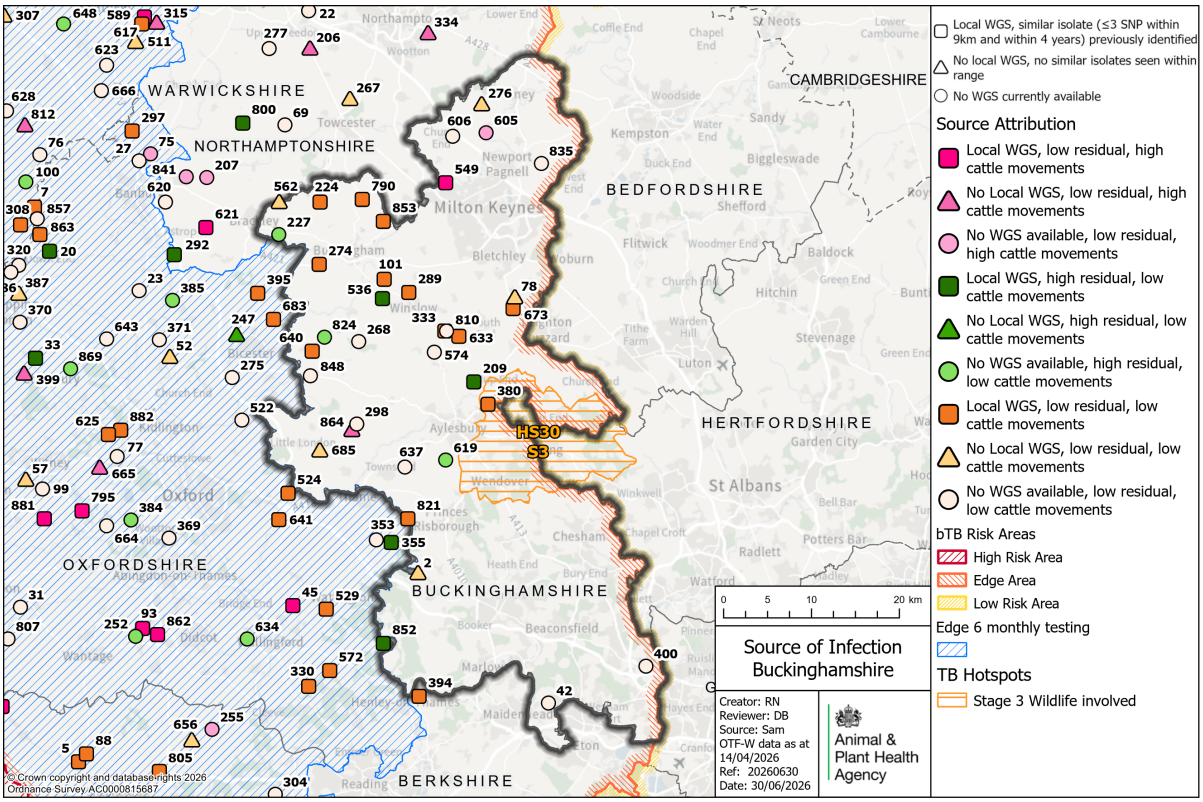


Figure 13: Map displaying the location of all 32 herds with a new TB incident (OTF-W or OTF-S) in Buckinghamshire in 2025, according to the available evidence for risk pathways of TB infection into each herd. The colour of the hotspot, along with its suffix, indicates the stage of controls in place in 2025: light orange is stage 3 (S3 is wildlife involved).

Local cattle movement, infected wildlife (in parts of the county potentially disturbed by major railway infrastructure work) and inadequate biosecurity is considered to be fuelling disease spread through the centre and north of the county.

Areas of Concern

Ackley B6-62 cluster

This cluster is located in the north-west of the county.

Historically, the most common M. bovis genotype in this area has been the local B6-62 clade of M. bovis. WGS analysis of isolates disclosed in 2025 were all genetically related and part of this cluster. At the end of 2025 this cluster comprised a total of 15 cattle farms, of which 6 had new incidents disclosed in 2025 and 2 had recurrent incidents (incidents in previous years in the same cluster).

This cluster included 2 isolates from wild deer carcases genetically identical to those from nearby cattle farms disclosed in 2025.

Buckinghamshire B6-11 cluster

This cluster was first identified in 2021 located in the centre-east of the county.

WGS investigations in 2025 identified a large cluster of genetically linked incidents within an 8km radius. The earliest cattle incidents were in 2017, with the majority occurring between 2021 and 2025.

At the end of 2025 the cluster included 13 farms. In 2025, 4 new incidents and one recurrent incident (previously affected in 2023) were identified.

No wildlife isolates have been identified in this cluster.

One new incident in 2025 was located within the Buckinghamshire portion of Hotspot 30.

Chinnor-Thame B6-62 cluster

It originated in neighbouring Oxfordshire in 2017and has since spread into the south west of Buckinghamshire. The first incidents in the county were identified in 2021 as a result of radial testing.

The cluster includes 20 cattle herds, 6 of which are in Buckinghamshire, all closely related both genetically and geographically. In 2025, one recurrent OTF-W incident was disclosed in Buckinghamshire within this cluster.

WGS analysis identified a wild deer isolate from 2023 that was genetically identical to nearby cattle incidents disclosed in Buckinghamshire in 2021 and 2022.

Incidents in Hotspot 30 in Hertfordshire (LRA), approximately 10 miles east of Chinnor, have also been genetically linked to Chinnor cluster. Further details on TB hotspots in the Low Risk Area of England can be found following the link.

TB hotspots

In this report the number of incidents per year in each Hotspot has been gathered using field veterinarian data. Previously, spatial GIS data was used to inform whether an incident was inside of a designated Hotspot. This change may create discrepancies between the number of incidents per year reported here, compared to previous reports.

Furthermore, incidents shown on the maps (Figures 9, 11 and 13) are point located at the centre of their County Parish Holding number (CPH). Incidents discussed in this section may also include holdings which are point located outside the boundary, but with land inside the hotspot boundary.

Further details on TB hotspots in the Low Risk Area of England can be found following the link.

There was one hotspot active in Buckinghamshire at the start of 2025: HS30.

Hotspot 30

HS30 was established in 2023 following detection of a cluster of OTF-W cattle TB incidents associated with clade B6-62 of M. bovis. All herds in this hotspot, which spans the east of Buckinghamshire (Edge Area) and West Hertfordshire (Low Risk Area) around the town of Tring, have since been subject to 12-monthly testing.

There was one new OTF-W incident (clade B6-11) detected within the boundary of the Buckinghamshire portion of HS30 in 2025, but it is considered epidemiologically unlinked to other HS30 incidents (of clade B6-62). There was also one new OTF-S incident detected within the Buckinghamshire portion of HS30 in 2025, compared to 2 OTF-W and 7 OTF-S incidents in 2024 (Figure 14). Between 2020 and 2023, no more than one incident (OTF-W and OTF-S) was reported in the Buckinghamshire portion of HS30.

There were no new incidents reported in the Hertfordshire portion of the hotspot in 2025. Since establishment of the hotspot, the number of OTF-W incidents in the Hertfordshire portion generally fluctuated between one and 2, with a peak of 3 in 2023. There was one OTF-S incident detected each year except for 2 in 2020 and 0 in 2025.

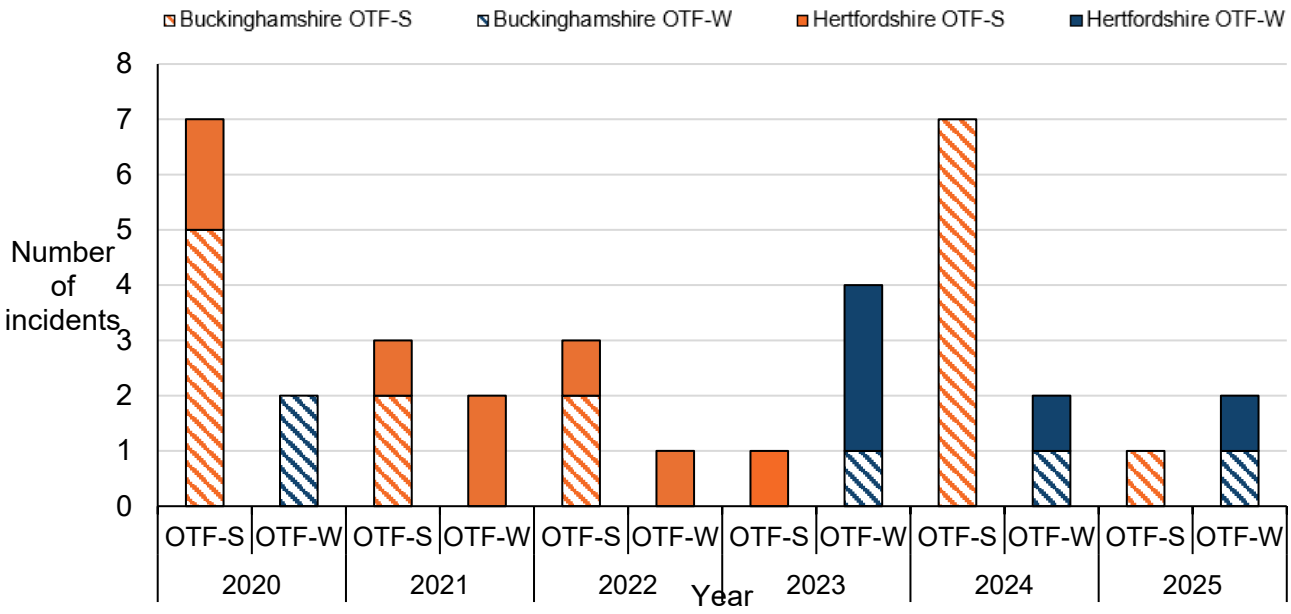


Figure 14: Annual number of new TB incidents detected in HS30, from 2020 to 2025.

Forward look

As in previous years, most OTF-W incidents across the county in 2025 were caused by infection with WGS clade B6-62 in the north and west of the county. Additionally, more incidents involving clade B6-11 were identified in 2025 in the centre-east of the county.

Rollout of WGS analysis suggests that endemic infection within local wildlife populations is contributing to disease presence in defined areas of the county, alongside indications of cross-boundary spread from neighbouring counties. This inference is supported by phylogenetic analysis demonstrating close genetic homology between M. bovis isolates from previous years in local populations of deer, alpacas, badgers, and cats, and those obtained from local cattle populations.

Purchasing of cattle from herds with undisclosed TB infection into Buckinghamshire continues to be a significant route of introduction of infection into this county. Buckinghamshire has a large beef finishing component, in which farms frequently purchase cattle from both high cattle density and High Risk and Edge TB risk areas. Mandatory post-movement skin testing, introduced in 2023, of cattle entering herds in the section of the Edge Area under annual TB surveillance (including Buckinghamshire) should help with the early detection of infected cattle moved into the county that were missed by pre-movement testing on their farms of origin. This in turn should reduce the risk of further spread of TB within the receiving herds and the potential subsequent infection spillover onto the local wildlife in Buckinghamshire.

Effective wildlife disease control measures to prevent spread, especially from neighbouring counties north and west of Buckinghamshire and current clusters of incidents within the county, are needed. As shown in this report, there are 2 clusters in Buckinghamshire and introduction of a Defra Cluster Project and badger vaccination in Buckinghamshire, like the ones in Oxfordshire, could be considered to support control of infection.

Informed case management, including the use of supplementary IFN-γ testing (mandatory for all OTF-W incident herds in this part of the Edge Area) alongside other Defra-approved ancillary tests, can be a valuable tool for farmers in their efforts to eradicate bovine TB from their herds. These tools can potentially reduce the spread of disease and improve the overall effectiveness of eradication programs.

Increased knowledge and implementation of on-farm biosecurity measures, better informed purchasing of cattle, increase in cattle surveillance, and continued wildlife disease control measures, such as badger vaccination, are paramount to stop the spread of TB within Buckinghamshire and across into neighbouring counties in the LRA over the next few years.

Appendix 1: cattle industry demographics

Table 1: Number (and percentage of total) of active cattle herds on the last day of the reporting year by herd type in Buckinghamshire (2023 to 2025).

Source: Sam

Breed purpose	2023	2024	2025
Beef	386 (85%)	380 (85%)	369 (84%)
Dairy	48 (11%)	51 (11%)	53 (12%)
Other	10 (2%)	10 (2%)	11 (3%)
Undetermined*	11 (2%)	8 (2%)	7 (2%)
Total	**455**	**449**	**440**

* Undetermined herd type herds are those are for which a herd type record is not available in Sam.

Table 2: Number of active herds on the last day of the reporting year in Buckinghamshire by herd size and herd type (dairy, beef, other and undetermined), between 2023 and 2025. Sources: Herds and herd type data from Sam, herd size data from RADAR (as of 31 December each year).

Year	Herd size	Beef	Dairy	Other	Undetermined	Total
2023	0	69	1	4	2	76
2023	1 to 50	138	8	5	4	155
2023	51 to 100	70	2	1	0	73
2023	101 to 200	57	16	0	0	73
2023	201 to 350	31	10	0	2	43
2023	351 to 500	11	1	0	1	13
2023	Greater than 500	10	10	0	2	22
2023	**Total**	**386**	**48**	**10**	**11**	**455**
2024	0	72	5	4	0	81
2024	1 to 50	129	9	6	3	147
2024	51 to 100	73	4	0	0	77
2024	101 to 200	62	12	0	0	74
2024	201 to 350	25	9	0	3	37
2024	351 to 500	10	3	0	0	13
2024	Greater than 500	9	9	0	2	20
2024	**Total**	**380**	**51**	**10**	**8**	**449**
2025	0	89	4	5	0	98
2025	1 to 50	118	12	6	2	138
2025	51 to 100	62	5	0	0	67
2025	101 to 200	58	10	0	0	68
2025	201 to 350	26	10	0	2	38
2025	351 to 500	8	3	0	1	12
2025	Greater than 500	8	9	0	2	19
2025	**Total**	**369**	**53**	**11**	**7**	**440**

Appendix 2: summary of headline cattle TB statistics

Table 3: Herd-level summary statistics for TB in cattle in Buckinghamshire between 2023 and 2025.

Source: Sam

Herd-level statistics	2023	2024	2025
(a) Total number of cattle herds live on Sam at the end of the reporting period	444	440	433
(b) Total number of whole herd skin tests carried out at any time in the period	444	521	499
(c) Total number of OTF cattle herds having TB whole herd tests during the period for any reason	346	359	340
(d) Total number of OTF cattle herds at the end of the report period (herds not under any type of TB movement restrictions)	414	389	396
(e) Total number of cattle herds that were not under restrictions due to an ongoing TB incident at the end of the report period	428	407	412
(f.1) Total number of new OTF-S TB incidents detected in cattle herds during the report period	6	20	12
(f.2) Total number of new OTF-W TB incidents detected in cattle herds during the report period	13	22	20
(f.3) Total number of new TB incidents (OTF-W and OTF-S) detected in cattle herds during the report period	19	42	32
(g.1) Of the new OTF-W herd incidents, how many can be considered the result of movement, purchase or contact from or with an existing incident based on current evidence?	1	4	1

Herd-level statistics	2023	2024	2025
(g.2) Of the new OTF-W herd incidents, how many were triggered by skin test Reactors or twice-inconclusive reactors (2xIRs) at routine herd tests?	8	18	14
(g.3) Of the new OTF-W herd incidents, how many were triggered by skin test Reactors or 2xIRs at other TB test types (such as forward and back-tracings, contiguous or check tests)?	2	3	2
(g.4) Of the new OTF-W herd incidents, how many were first detected through routine slaughterhouse TB surveillance?	0	0	0
(h.1) Number of new OTF-W incidents revealed by enhanced TB surveillance (radial testing) conducted around those OTF-W herds	0	0	0
(h.2) Number of new OTF-S incidents revealed by enhanced TB surveillance (radial testing) conducted around those OTF-W herds	13	20	12
(i) Number of OTF-W herds still open at the end of the period (including any ongoing OTF-W incidents that began in a previous reporting period)	13	20	12
(j) New confirmed (positive M. bovis culture) incidents in non-bovine species detected during the report period (indicate host species involved)	0	0	0
(k.1) Number of grazing approved finishing units active at end of the period	6	6	6
(k.2) Number of non-grazing approved finishing units active at end of the period	0	0	0
(k.3) Number of grazing exempt finishing units active at end of the period	0	0	0
(k.4) Number of non-grazing exempt finishing units active at end of the period	450	446	439

Table 4: Animal-level summary statistics for TB in cattle in Buckinghamshire between 2023 and 2025.

Source: Sam

Animal-level statistics (cattle)	2023	2024	2025
(a.1) Number of cattle tested with tuberculin skin tests in the period	72,347	83,359	76,785
(a.2) Number of cattle tested with additional IFN-γ blood tests in the period	4,044	2,584	4,037
(a.3) Total number of cattle tested with tuberculin skin tests or additional IFN-γ blood tests in the period (animal tests)	76,391	85,943	80,822
(b.1) Reactors detected by tuberculin skin tests during the year	113	174	193
(b.2) Reactors detected by additional IFN-γ blood tests (skin-test negative or Inconclusive Reactors (IR) animals) during the year	127	116	194
(c) Reactors detected during year per incidents disclosed during year	12.6	7.1	12.1
(d) Reactors per 1,000 animal tests	3.1	3.4	4.8
(e.1) Additional animals slaughtered during the year for TB control reasons (dangerous contacts, including any first time IRs)	0	10	2
(e.2) Additional animals slaughtered during the year for TB control reasons (private slaughters)	0	2	2

Animal-level statistics (cattle)	2023	2024	2025
(f) Slaughterhouse cases (tuberculous carcases) reported by the Food Standards Agency (FSA) during routine meat inspection	6	7	10
(g) SLH cases confirmed by M. bovis PCR testing or bacteriological culture	2	3	5

Note (c) Reactors detected during year per incidents disclosed during year, reactors may be from incidents disclosed in earlier years, as any found through testing during the report year count in the table above.

Note (g) SLH cases confirmed by culture of M. bovis, not all cases reported are submitted for laboratory analysis. All cases reported are from any period prior to or during restrictions.

Appendix 3: suspected sources of M. bovis infection for all the new OTF-W and OTF-S incidents identified in the report period

In 2025, 20 out of 32 (63%) new TB incidents in Buckinghamshire received a preliminary or final APHA veterinary investigation to identify the source of infection. Not all Disease Report Form (DRF) investigations were carried out in 2025.

Each TB incident investigated could have up to 3 potential risk pathways identified. Each risk pathway is given a score that reflects the likelihood of that pathway bringing TB into the herd. The score is recorded as either:

- definite (score 8)
- most likely (score 6)
- likely (score 4)
- possible (score 1)

The sources for each incident are weighted by the certainty ascribed. Any combination of definite, most likely, likely, or possible can contribute towards the overall picture for possible routes of introduction into a herd. If the overall score for a herd is less than 6, then the score is made up to 6 using the ‘Other or unknown source’ option. Buffering up to 6 in this way helps to reflect the uncertainty in assessments where only ‘likely’ or ‘possible’ sources are identified.

Table 5 combines the data from multiple herds and provides the proportion of pathways in which each source was identified, weighted by the certainty that each source caused the introduction of TB. The output does not show the proportion of herds where each pathway was identified (this is skewed by the certainty calculation). WGS of M. bovis isolates can be a powerful tool in identifying a likely source of infection, however WGS clades are not able to be determined for OTF-S herds. As a result of varying levels of uncertainty, only broad generalisations should be made from these data. A more detailed description of this methodology is provided in the explanatory supplement for the annual reports 2025.

Table 5: Suspected sources of M. bovis infection for the 20 incidents with a preliminary or a final veterinary assessment from APHA in Buckinghamshire in 2025.

Source of infection	Possible (1)	Likely (4)	Most likely (6)	Definite (8)	Weighted contribution
Badgers	3	10	6	0	53.5%
Cattle movements	7	2	1	1	18.4%
Contiguous	0	0	0	0	0.0%
Residual cattle infection	5	1	1	0	8.4%
Domestic animals	0	0	0	0	0.0%
Non-specific reactor	0	0	0	0	0.0%
Fomites	1	0	0	0	0.8%
Other wildlife	6	2	0	0	8.1%
Other or unknown source*	0	0	0	0	10.8%

Please note that each TB incident could have up to 3 potential pathways so totals may not equate to the number of actual incidents that have occurred.

* For the purpose of reflecting uncertainty in the overall picture, this pathway may be ascribed additional weighting where there is low certainty (such as ‘possible’ or ‘likely’) within other pathways.

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