Animal &
Plant Health
Agency

Regional six-monthly report of descriptive bovine TB epidemiology for the Low Risk (4 yearly testing) Areas of England

Cumbria, Lancashire, Merseyside, Gt Manchester

2019 Mid-year (first six months)

Contents

1. Geographical distribution of bovine TB breakdowns in the region

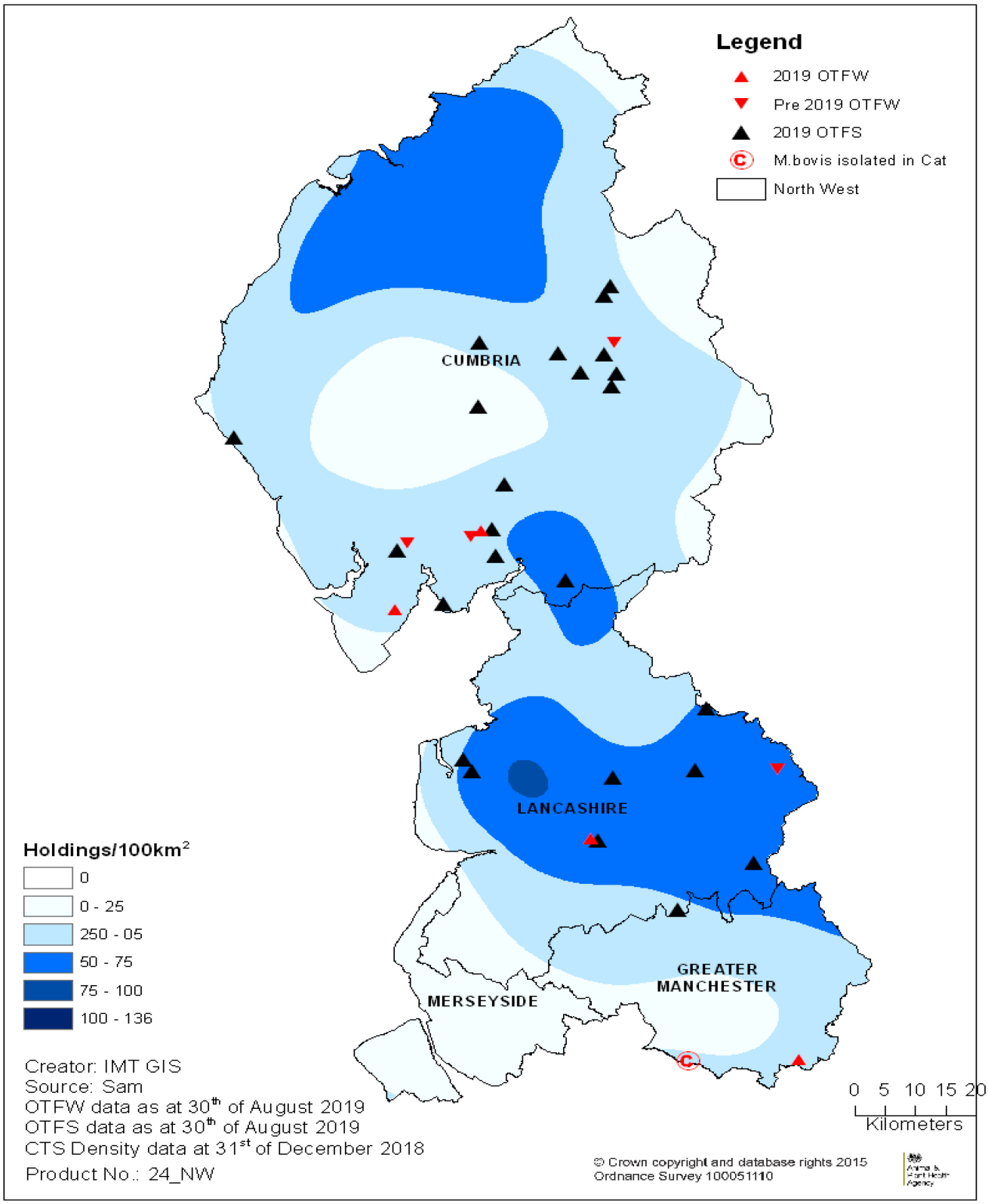

Figure 1: Geographical distribution of all new TB breakdowns (OTFW and OTFS) in 2019 and pre-2018 OTFW breakdowns still ongoing at the end of the report period overlaid on a cattle holding density map.

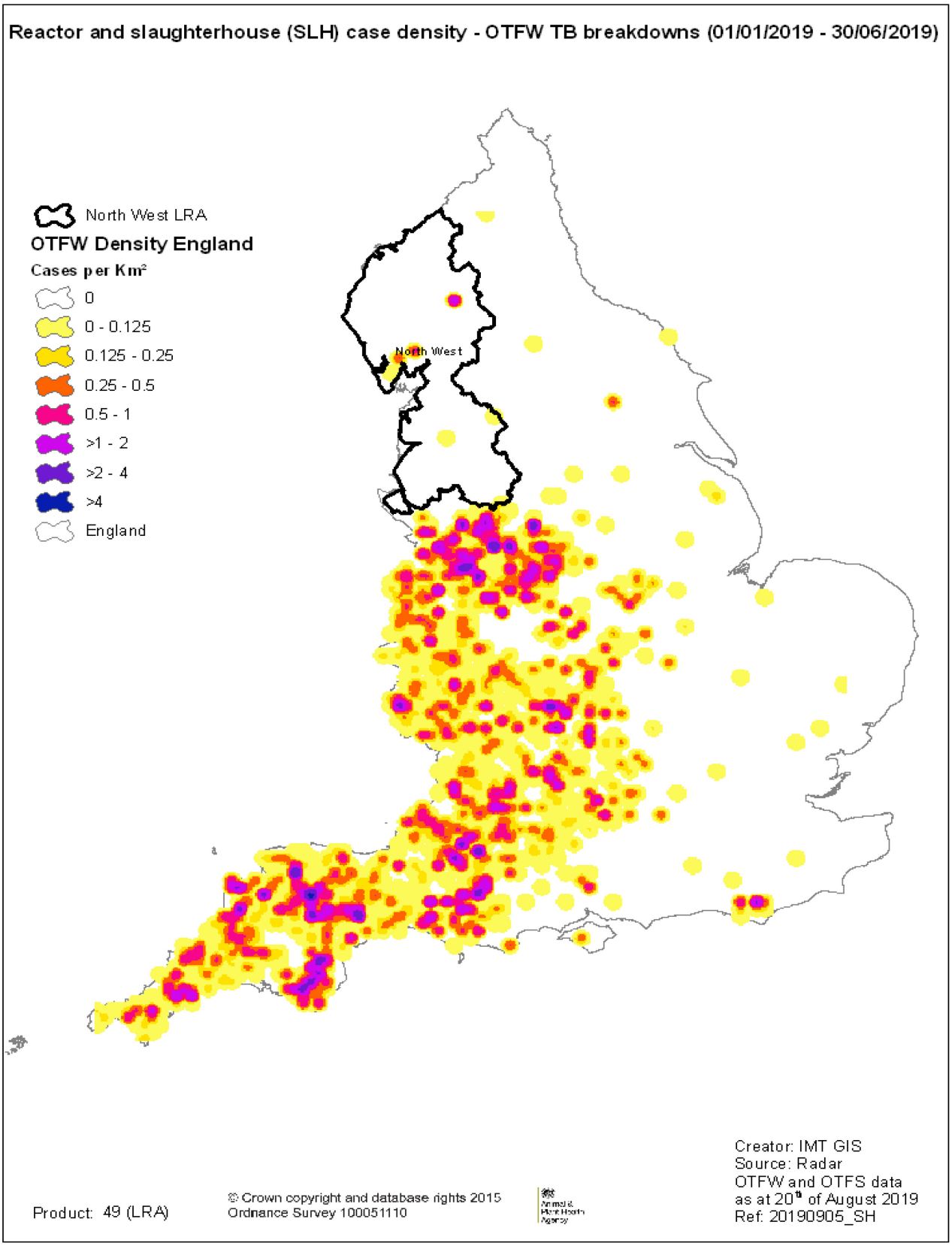

Figure 2: Display the density of skin test, IFN-gamma test reactors and slaughterhouse cases per km² in OTFW TB incidents in the first six-months of 2019.

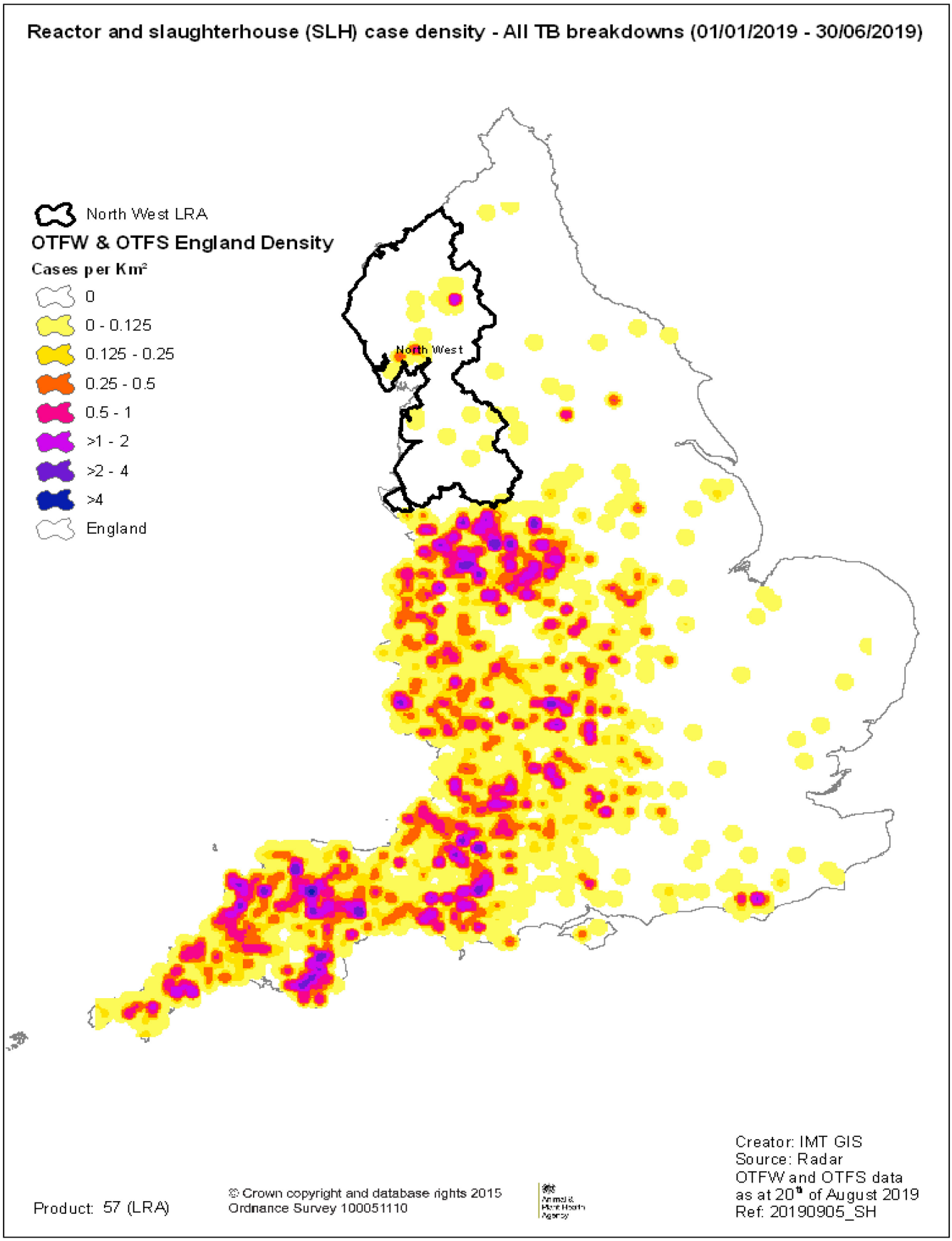

Figure 3: Display the density of skin test, IFN-gamma test reactors and slaughterhouse cases per km² in all TB incidents in the first six-months of 2019.

2. Summary of the regional headline cattle TB statistics

There were four new TB herd incidents (breakdowns) with OTF status withdrawn (OTFW) detected in the Northwest region of the LRA during the reporting period. Two of these were in South Cumbria, one in Lancashire and one in Greater Manchester. In addition, during this reporting period, there were 24 OTFS breakdowns with non-visible lesion and culture-negative test reactors. 16 of these OTFS breakdowns were in Cumbria, seven in Lancashire and one in Greater Manchester. Merseyside had no TB breakdowns during the reporting period.

A cluster of OTFS/W cases has emerged in the South Lakes area of Cumbria. Sporadic OTFS/W breakdowns have occurred in this area for the last 8-9 years with varying genotypes of M. bovis, but more recently their number has been increasing. Several breakdowns of M. bovis genotype 25:a have also been confirmed in a small section of this area.

An epidemiological investigation has been undertaken and a request submitted for enhanced wildlife/cattle TB surveillance in the South Lakes area This has now been agreed and an area to the east of lake Windemere has been identified.

The OTFW breakdown in Lancashire was in a dealer's herd who buys cattle regularly from the HRA. Purchase of infected cattle is deemed to be the most likely origin of infection. The affected herd has since regained OTF status. A radial testing regime has been instigated with no breakdowns reported to date.

The OTFW breakdown in Greater Manchester was on a premises very close to the Cheshire border and was caused by genotype 25:a of M. bovis, the predominant strain of the bacterium in the adjoining Edge Area counties of Cheshire and Derbyshire. The most likely origin of infection for this herd is deemed to have been local spread through infected wildlife. This herd also regained its OTF status at the end of August 2019.

Herd-level statistics	Cumbria	Lancashire	Merseyside	Greater Manchester
(a) Total number of cattle herds live on Sam at the end of the reporting period	3393	2056	71	476
(b) Total number of cattle herds subject to annual TB testing at the end of the reporting period (any reason)	728	166	11	57
(c) Total number of herd tests carried out in the period	1066	422	16	117
(d) Total number of OTF cattle herds TB tested during the period for any reason	554	295	12	72
(e) Total number of OTF cattle herds at the end of the report period (i.e. herds not under any type of TB2 restrictions)	3356	2037	71	462

(f) Total number of cattle herds that were not under restrictions due to an ongoing TB breakdown at the end of the report period.	3385	2052	71	473
(g) Total number of new TB breakdowns detected in cattle herds during the report period	18	8	0	2
• OTF status suspended (OTFS)	16	7	0	1
• OTF status withdrawn (OTFW)	2	1	0	1
(h) Of the new OTFW herd breakdowns, how many:				
• occurred in a holding affected by another OTFW breakdown in the previous three years?	0	0	0	0
• could be considered secondary to a primary breakdown based on current evidence?	0	0	0	0
• were triggered by skin test reactors or 2xIRs at routine herd tests?	0	0	0	0
• were triggered by skin test reactors or 2xIRs at other TB test types (forward and back-tracings, contiguous, check tests, etc.)?	2	0	0	1
• were first detected through routine slaughterhouse TB surveillance?	0	1	0	0
(i) Number of new breakdowns revealed by enhanced TB surveillance (radial testing) conducted around those OTFW herds				
• OTFS	0 *	0	0	0
• OTFW	0 *	0	0	0
(j) Number of OTFW herds still open at the end of the period (including any ongoing OTFW breakdowns that began in a previous quarter)	5	1	0	1
(k) New confirmed (positive M. bovis culture) incidents in non-bovine species detected	0	0	0	1-Cat

during the report period (indicate host species involved)				

Animal-level statistics (cattle)	Cumbria	Lancashire	Merseyside	Greater Manchester
(a) Total number of cattle tested in the period (animal tests)	148132	48398	764	6049
(b) Reactors detected:	167	13	0	7
• tuberculin skin test	49	12	0	1
• additional IFN-gamma blood test reactors (skin-test negative or IR animals)	118	1	0	6
(c) Reactors per breakdown	9	2	0	4
(d) Reactors per 1000 animal tests	1.13	0.27	0	1.16
(e) Additional animals identified for slaughter for TB control reasons (DCs, including any first-time IRs)	0	0	0	0
(f) SLH cases (tuberculous carcases) reported by FSA	1	2	0	0
(g) SLH cases confirmed by culture of M. bovis	0	1	0	0

* None recorded this reporting period but most recent breakdowns will be reported in end of 2019 year report

3. Suspected sources of Mycobacterium bovis infection for all the new officially tuberculosis free status withdrawn breakdowns identified in the report period

Most likely origin	Provisional	Final
Introduction (e.g. purchase) of infected animal(s)	1	
Local - lateral spread from neighbouring holdings:		
• exposure to infected wildlife e.g. badgers		1
• other farmed species		

• recrudescence of residual infection from a previous TB breakdown		
• infected human source		
Undetermined/obscure	2	
Other (explain)		

Categorisation of all new OTFW TB breakdowns identified in this region, according to:

(a) the probability of them being the result of introduced infection (inward cattle movements) and
(b) the strength of evidence that we are dealing with an isolated incident without further propagation from the index farm to neighbouring herds (or vice versa)

		Probability of isolated, sporadic ('one-off') breakdown, without secondary local spread from the index case		
		Likely (no secondary breakdowns detected)	Possible (no secondary breakdowns detected, but dataset incomplete)	Not likely (secondary spread from the index case, or exposure to a common wildlife source has occurred)
Probability of M. bovis infection introduced through cattle movements	Definite			
	Likely	1		
	Possible			2
	Not likely (indigenous infection in the locality)	1		

4. Overview of the Bovine TB Eradication Programme in the region

Enhanced wildlife/cattle surveillance continues in East Cumbria (hotspot HS-21). No further OTFW breakdowns have been detected within HS-21 in this reporting period, however five new OTFS breakdowns were identifed, including one premises which is undergoing its fourth breakdown. At the end of June 2019, there were four cattle herds under movement restrictions in HS-21 due to an ongoing TB breakdown.

The cattle herd testing in HS-21 is proceeding well, with the fourth round of six monthly testing being almost finished with just four herds remaining to be tested at time of writing and the fifth round well underway.

Compliance with the enhanced bTB surveillance and control measures amongst the farmers in HS-21 remains excellent.

Liaison and educational meetings with NFU and farmers in Cumbria and Lancashire have been held during the reporting period.

5. Wildlife

The ongoing wildlife surveillance in HS-21 in East Cumbria continues and has detected, to date, three road kill badgers with confirmed M. bovis infection (all during 2017). Their genotype, 17.z, was identical in all three cases and matches that found in the relevant cattle breakdowns. The seven deer submitted for testing to date have all had negative cultures.

In March 2019, the results were released from TB surveillance conducted in badgers removed from the badger control intervention area located within HS-21. They showed that 41 out of 363 tested badgers (11.0%) were positive for Mycobacterium bovis, all with the 17:z genotype previously identified in this area. The prevalence of infection was higher, at 20.9%, for those badgers culled inside the previously designated central “Minimum Infected Area”.

6. Other susceptible species

One household cat was confirmed as having M. bovis infection during the reporting period. The cat lived in south west Manchester. The infection is likely to be due to the cat’s consumption of a commercially available raw pet food product.

Glossary

- bTB – (bovine) Tuberculosis (infection of cattle with *M. bovis*)
- Edge Area (EA) – the annual TB testing area of England situated between the High and Low Risk Areas
- Epidemiology – the science that studies the patterns, causes, and effects of health and disease conditions in defined populations
- Genotype – the genetic makeup of a cell, an organism, or an individual usually with reference to a specific characteristic under consideration
- High Risk Area (HRA) – the annual testing area of England comprising the South West, West Midlands and part of East Sussex, in which *M. bovis* infection is endemic in cattle herds and in badgers
- IFN-γ – interferon-gamma test. A supplementary in vitro blood test for TB used by APHA in conjunction with the tuberculin skin test in some situations, usually to improve the overall diagnostic sensitivity in infected herds with OTF status withdrawn
- Low Risk Area (LRA) – the four-yearly TB testing area of the North and East of England in which *M. bovis* infection occurs only sporadically in cattle and is not considered endemic in wildlife. Although the default testing interval for routine TB surveillance is four years, some higher risk herds in the LRA are subjected to annual testing. There is also more intensive surveillance testing (radial testing) around any herds in the LRA (and parts of the Edge Area) that have their officially TB free status withdrawn due to a TB breakdown
- OTF – Officially Tuberculosis Free status. Herds that are not subjected to TB movement restrictions of any type are classified as OTF
- OTF-S – Officially Tuberculosis Free Suspended status. In England, an OTFS breakdown is a herd in which all the reactors removed had no visible lesions (NVL) on post-mortem examination and had negative culture results for *M. bovis*
- OTF-W – Officially Tuberculosis Free Withdrawn status. In England, an OTFW breakdown is a herd in which at least one test reactor with visible lesions (VL) and/or an animal with *M. bovis*-positive culture result have been disclosed
- Persistent herd breakdown – a herd that has been under TB movement restrictions for 18 months or longer due to infection with *M. bovis*
- Potential ‘Hotspots’ – a temporary area of enhanced TB cattle and wildlife surveillance that may be declared around some OTFW TB breakdowns of uncertain origin detected in a Region of historically low TB incidence
- SIT – short-interval test. A tuberculin skin test of all bovines in a TB breakdown herd, carried out 60 days after the removal of the last test reactor (or laboratory confirmation of a TB slaughterhouse case) in order to restore the OTF herd status. In the majority of cases, two successive SITs with negative results are necessary. The results can be read using standard or severe interpretation of the skin test. Calves under 42 days old are usually exempted.
- VRA – Veterinary Risk Assessment.

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