Regional Year-end Report of Descriptive Bovine TB Epidemiology for the Low Risk (Four Yearly Testing) Areas of England

Regional Office:
Yorkshire, comprising North Yorkshire (48 and 50) / West Yorkshire (49) / South Yorkshire (47) and Humberside (51)

Year-end report for 2018:

Report from 1 January until 31 December 2018.

1. Cattle Industry in the Region

The Yorkshire cattle industry is large and diverse, with 50% of registered herds being beef rearing and finishing herds, 33% being beef breeding herds and the remainder being dairy herds. Bovine tuberculosis (bTB) is found predominantly in beef fattening/finishing units which abound, taking advantage of abundant co-products from the low ground arable sector. To maintain throughput, some of these herds source animals fairly indiscriminately from multiple sources, many from the endemic bTB areas in the West and South West of England / Wales. Very large units (1000+) are becoming more common. By contrast, in some areas of North and West Yorkshire, a high density of smaller herds can still be found.

Most breeding replacement movements take place via local routes, with some imports from other countries. Buyers are generally well aware of the bTB risk. Beef cattle buying follows the general English pattern of West / South West England and Wales to East / North East England. Market movements are frequent and this is further facilitated by dealers who buy from holdings and markets in the West / South West and facilitate supply to finishers in the North and East. The larger beef finishing units, often permanently housed and committed to supply contracts with beef processors, will prioritise semi-continual availability of cattle in their preferred specification over perceived bTB disease risk.

Currently there are fifteen Licensed Finishing Units (LFU) in the region for fattening of cattle from OTF premises under biosecure conditions. We have had enquiries from other farmers in the region to set up other similar units, which we are currently assessing.

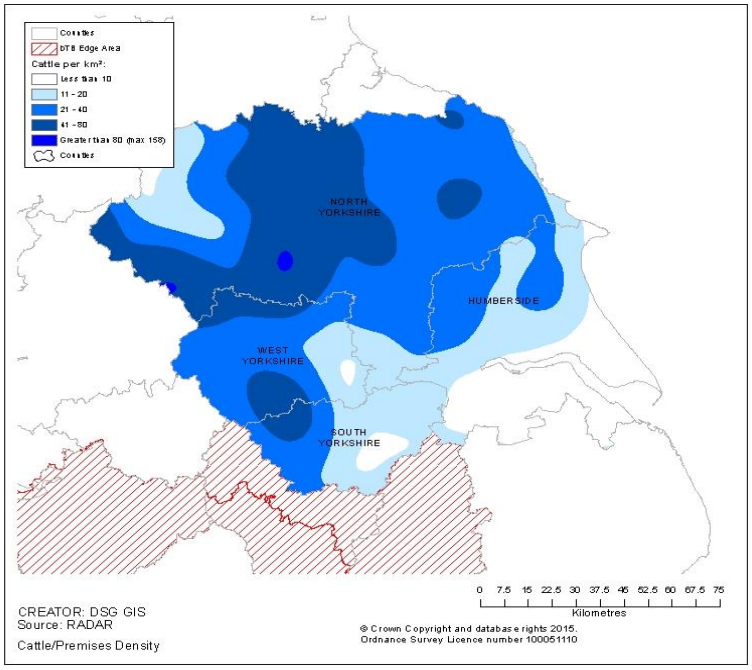
Number of cattle premises by size band in the division at 1 January of the reporting year.

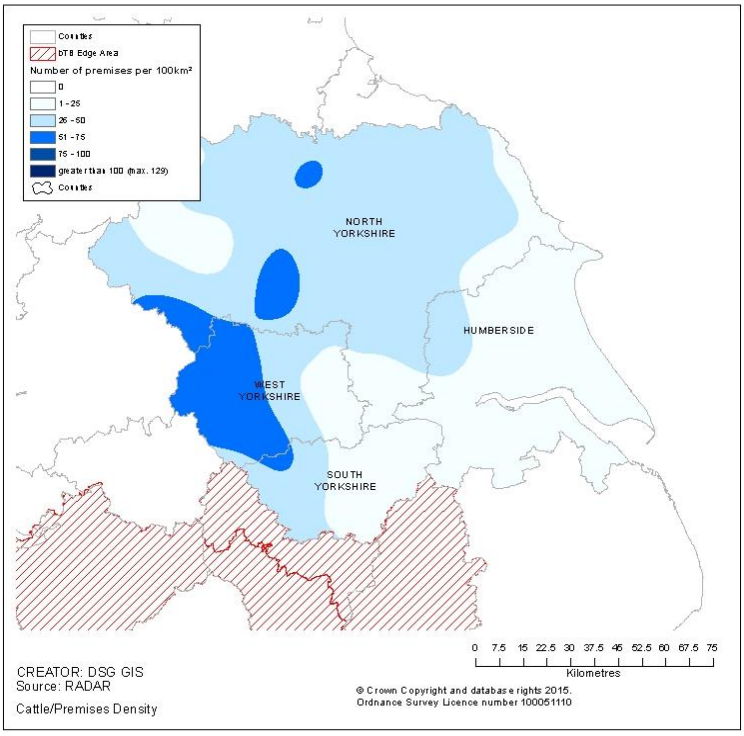
Cattle per premises	**0**	**1-50**	**51-100**	**101-200**	**201-350**	**351-500**	**501+**	**All**	**Mean**	**Median**
South Yorkshire 47	3	214	79	59	36	12	5	408	87	44
North Yorkshire 48	31	1332	554	538	306	113	105	2979	119	59
West Yorkshire 49	8	671	156	101	57	15	10	1018	63	25
East Yorkshire 50	1	104	29	25	11	9	5	184	95	43
Humberside 51	11	343	123	118	50	21	9	675	87	46

Cattle breed purpose - numbers and percentages at 1 January of the reporting year.

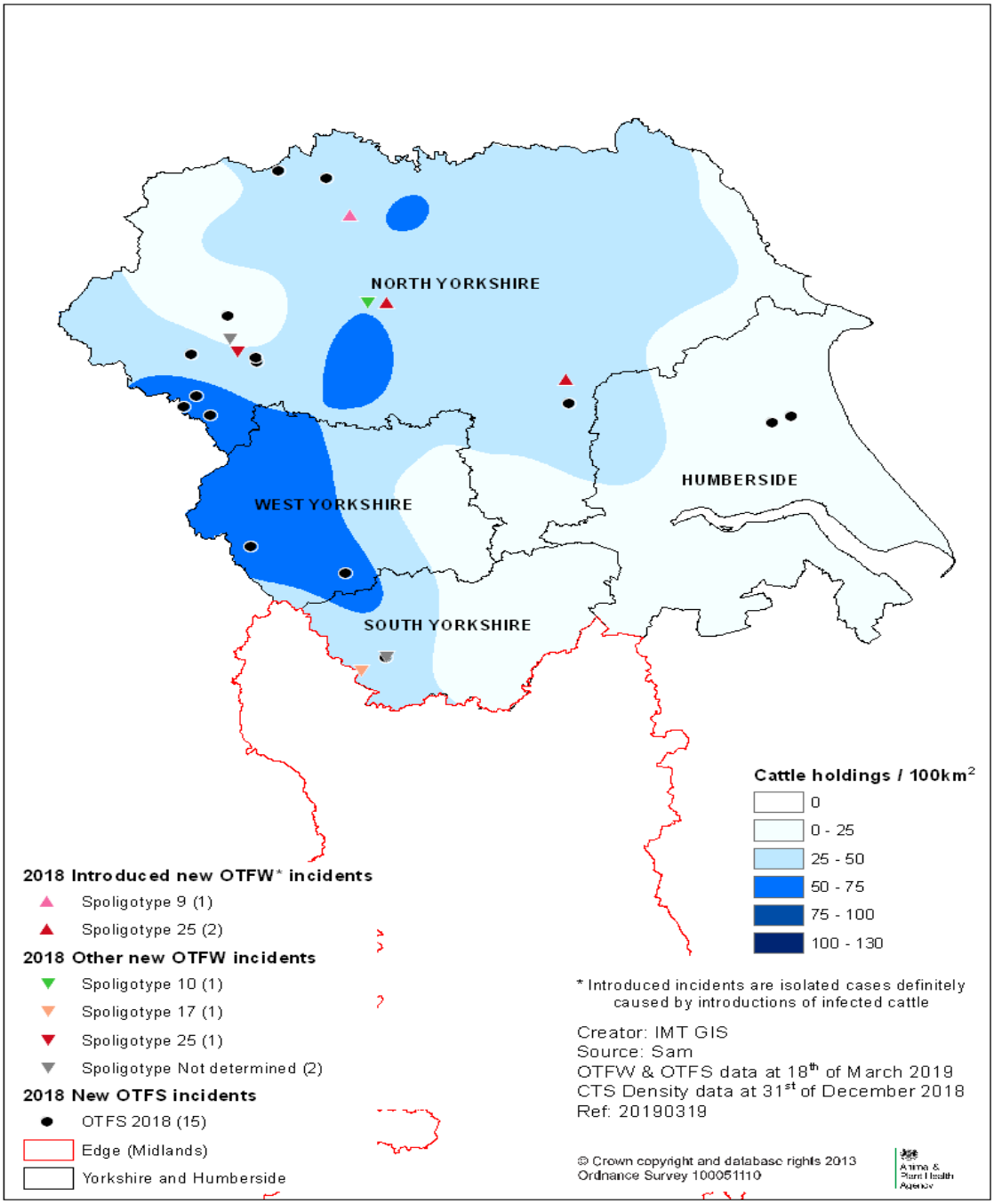
	Beef	Dairy	Dual purpose	Unknown	Total
South Yorkshire 47	24694 (69.6%)	9332 (26.3%)	1477 (4.2%)	1 (0.0%)	35504
North Yorkshire 48	216556 (60.9%)	129951 (36.5%)	9182 (2.6%)	37 (0.0%)	355726
West Yorkshire 49	41603 (64.8%)	19392 (30.2%)	3181 (5.0%)	14 (0.0%)	64190
East Yorkshire 50	12021 (68.6%)	4954 (28.3%)	541 (3.1%)	1 (0.0%)	17517
Humberside 51	46419 (78.9%)	10788 (18.3%)	1603 (2.7%)	3 (0.0%)	58813

Density of cattle (top) and cattle premises (bottom) at 1 January of the reporting year.





2. Geographical Distribution of Bovine TB Breakdowns in the Region



3. Summary of the Regional Headline Cattle TB Statistics

Yorkshire has a relatively small number of bTB incidents. Eradication of infection from these has so far been relatively easily achieved, by application of standard testing regimes. The majority result from direct movement of infected beef fattening animals from endemic bTB areas. There is a small subset of cases each year that result from movement of infected animals between herds within the region prior to their detection. There is currently no convincing evidence of wildlife infection.

From 1st January 2018 until 31st of December 2018 there were 23 new herd incidents in Yorkshire, of which eight had animals with TB lesions or culture-positive results (OTF status withdrawn). This compares with the 31 new TB herds incidents in 2017 of which 6 were confirmed. In comparison there were seven OTFW cases in 2016 and 15 in 2015 in this region. Eight more cases that had started in 2017 ended in 2018. At the end of 2018 there were ten ongoing incidents in Yorkshire, five of which currently OTFW.

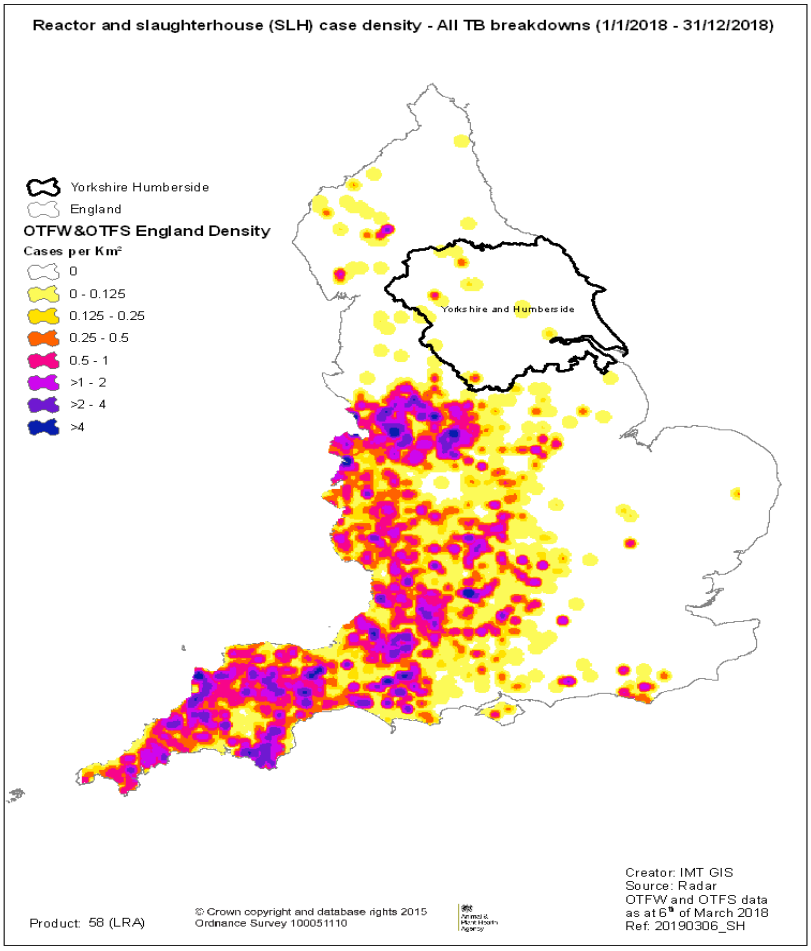
Radial surveillance testing was not undertaken around one of the new OTFW incidents, based on a favourable veterinary risk assessment (VRA) as this was a Licensed Finishing Unit. To date several additional incidents have been revealed in the radial surveillance zones instigated in this region.

Herd-level statistics	**South Yorkshire 47**	**North Yorkshire 48+50**	**West Yorkshire 49**	**Humberside /East Yorkshire 51**
(a) *Total number of cattle herds live on Sam at the end of the reporting period*	494	3693	1205	820
(b) *Total number of cattle herds subject to annual TB testing at the end of the reporting period (any reason)*	65	230	26	53
(c) *Total number of herd tests carried out in the period*	330	1595	339	334
(d) *Total number of OTF cattle herds TB tested during the period for any reason*	154	963	292	187
(e) *Total number of OTF cattle herds at the end of the report period (i.e. herds not under any type of TB2 restrictions)*	476	3659	1194	816
(f) *Total number of cattle herds that were not under restrictions due to an ongoing TB breakdown at the end of the report period.*	486	3675	1205	819
(g) *Total number of new TB breakdowns detected in cattle herds during the report period*	3	16	2	2
• *OTF status suspended (OTFS)*	1	10	2	2
• *OTF status withdrawn (OTFW)*	2	6	0	0
(h) Of the new OTFW herd breakdowns, how many:				
• occurred in a holding affected by another OTFW breakdown in the previous three years?	1	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	1	0	0
• were triggered by skin test reactors or 2xIRs at other TB test types (forward and back-tracings, contiguous, check tests, post-movement, etc.)?	2	1	0	0
• were first detected through routine slaughterhouse TB surveillance?	0	4	0	0
(i) Number of new breakdowns revealed by enhanced TB surveillance (radial testing) conducted around those OTFW herds	1	6	0	1
• OTFS	1	5	0	1
• OTFW	0	1	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 reporting period)*	2	3	0	0
(k) New confirmed (positive *Mycobacterium. bovis* culture) incidents in non-bovine species detected during the report period (indicate host species involved)	0	0	0	0

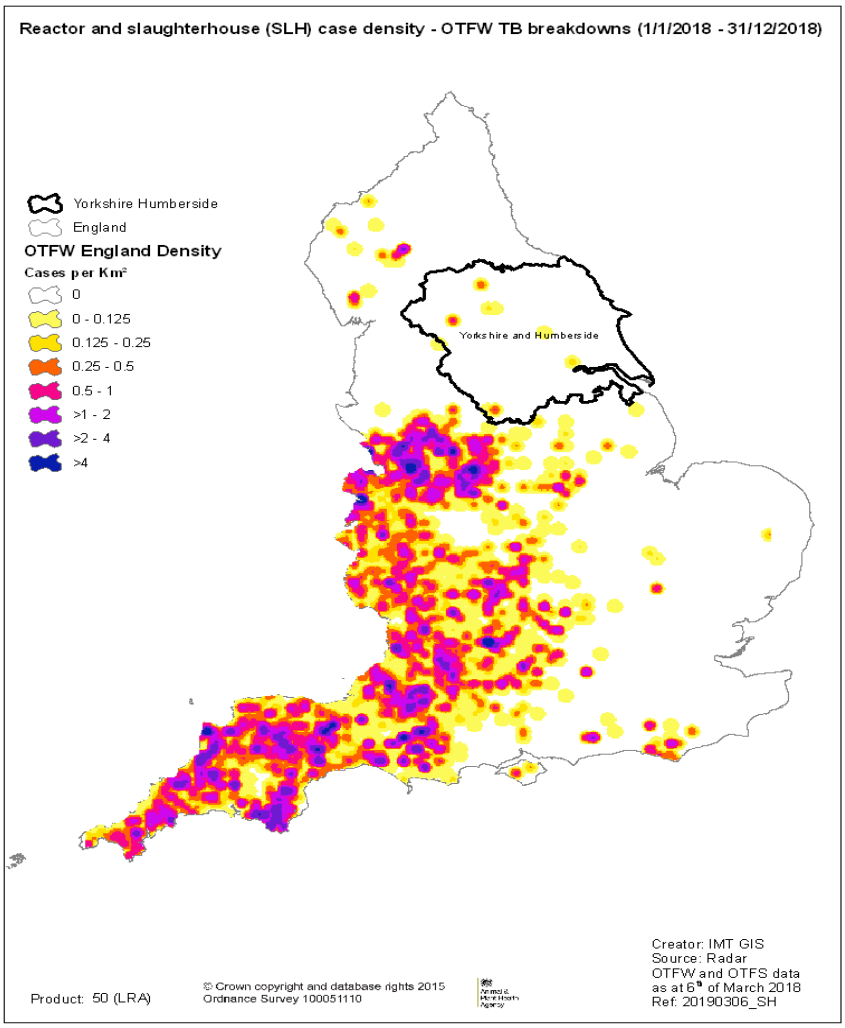
Animal-level statistics (cattle)	South Yorkshire 47	North Yorkshire 48+50	West Yorkshire 49	Humberside /East Yorkshire 51
(a) *Total number of cattle tested in the period (animal tests)*	14800	97888	14030	11712
(b) *Reactors detected:*	13	59	3	10
• *tuberculin skin test*	3	29	3	3
• *additional IFN-gamma blood test reactors (skin-test negative or IR animals)*	10	30	0	7
(c) *Reactors per breakdown*	4	4	2	5
(d) *Reactors per 1000 animal tests*	0.88	0.60	0.21	0.85
(e) *Additional animals identified for slaughter for TB control reasons (DCs, including any first-time IRs)*	0	3	0	0
(f) *SLH cases (tuberculous carcases) reported by FSA*	0	13	0	0
(g) *SLH cases confirmed by culture of M. bovis*	0	4	0	0

Density of TB reactors and slaughterhouse cases in TB breakdowns per km²

Density of skin test reactors, IFN-gamma test reactors and slaughterhouse cases in OTFW and Officially TB Free Suspended (OTFS) breakdowns per km² taken in the reporting period



Density of skin test reactors, IFN-gamma test reactors and slaughterhouse cases in Officially TB Free Status Withdrawn (OTFW) breakdowns per km² taken in the reporting period



4. Suspected Sources of *M. bovis* Infection for all the New OTFW Breakdowns Identified in the Report Period

Most likely origin	Provisional	Final
Introduction (e.g. purchase) of infected animal(s)	1	3
Local - lateral spread from neighbouring holdings:	2	0
• exposure to infected wildlife e.g. badgers		0
• other farmed species		
• recrudescence of residual infection from a previous TB breakdown		
• infected human source		
Undetermined/obscure	2	
Other (explain)		

Please attempt to categorise all new OTFW TB breakdowns identified in your region using the following risk matrix, 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). Enter the corresponding numbers of breakdowns in the relevant boxes. Any OTFW breakdowns falling in the greyed-in boxes may be removed from the county bTB incidence calculations for the purposes of EU reporting:

		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 introduced *M. bovis* infection introduced via cattle movements	**Definite**	2	1	
	Likely			
	Possible	1	4	
	Not likely (indigenous infection in the locality)			

List the CPHs of those herds with OTFW breakdowns categorised as definite or likely introduced cases with no evidence of local spread (greyed-in boxes):

5. Overview of the bTB Eradication Programme in the Region

Background four-yearly routine surveillance testing across the region.

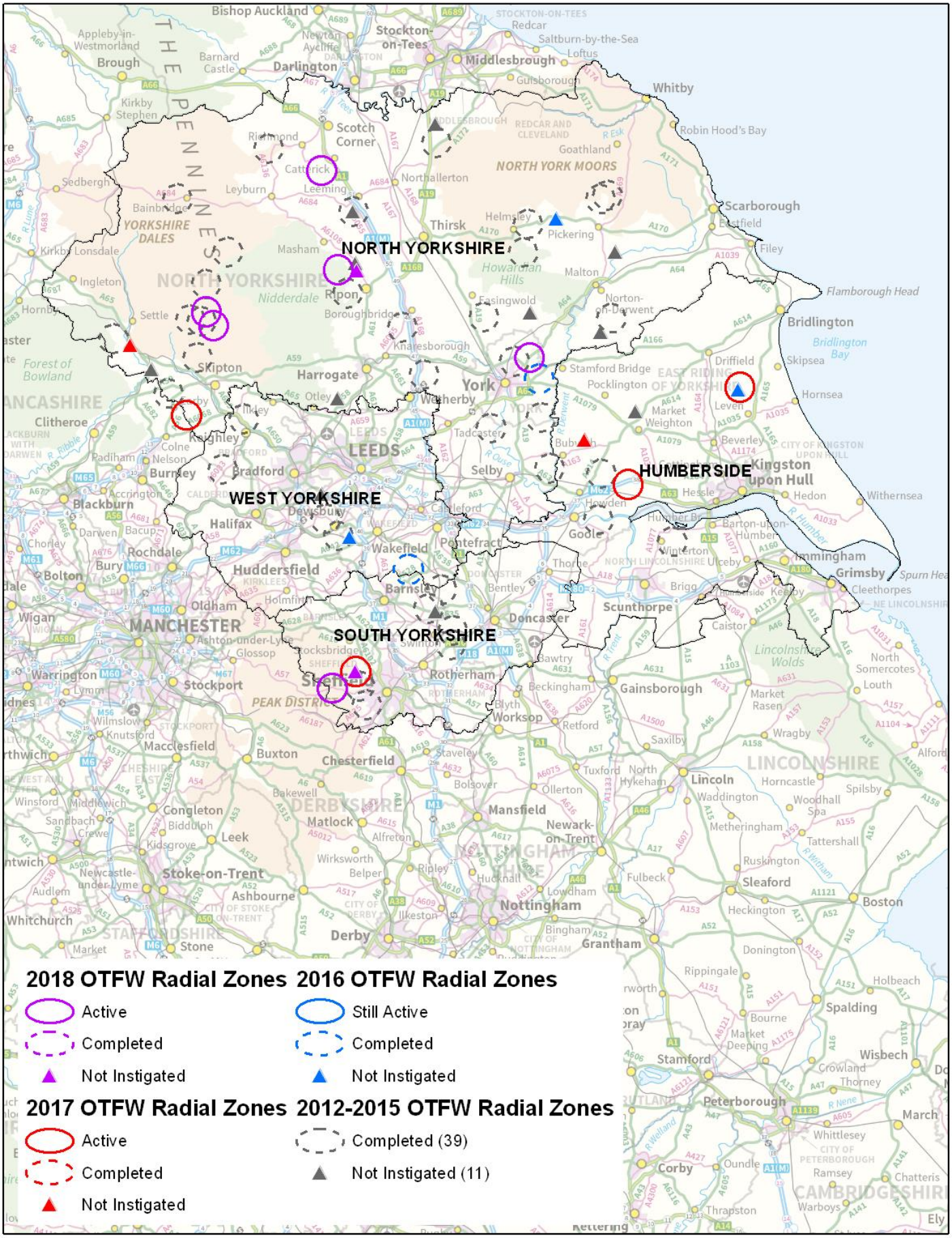
- Enhanced bTB herd surveillance (radial testing) instigated for all OTFW breakdowns by default, with any exemptions subject to VRA by the case Veterinary Officer.
- One exemption was granted from radial surveillance within the reporting period. Licensed Finishing Units have been encouraged so that slaughterhouse cases from those units will not generate radial surveillance or enhanced testing of neighbouring herds.
- One interferon-gamma testing exemption applied for an OTFW breakdown herd that it is a Licensed Finishing Unit.
- TB in other species: see Section 7 below.
- No confirmed or suspected cases of zoonotic (human) *M. bovis* infection.
- No suspected cases of non-specific or fraudulent skin test reactors.
- No bTB breakdowns involving producer-retailers of raw drinking milk, unpasteurised cheese-makers or open farms during the reporting period.
- The first meeting of the TB Eradication Group for the Yorkshire area took place on Thursday 9th November 2017 at the York NFU office. Key stakeholders were involved and the general opinion was that it was a useful meeting. Further meetings have been organised as the perceived need indicates, which will be driven by local issues and national policy development.

6. Wildlife

No confirmed *M. bovis* infection has been detected in wildlife in the area.

7. Other Susceptible Species

None to date.



Creator: IMT GIS
Source: Sam
OTFW data as at 18th of March 2019
Ref: 20190318_YH
Product No: 42c

Date: 18/03/2019

0 5 10 15 20 25 Kilometers

Animal & Plant Health Agency

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.