

Developing Online Maps of Bovine Tuberculosis for Farmers and Vets

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1. Introduction

Bovine Tuberculosis (bTB) is a continuing problem in England. Making information on the location of current and historic bTB breakdowns may help farmers make informed decisions on where to buy and graze cattle, and improve their biosecurity to reduce the risk of bTB. A change in legislation in 2014 has allowed farmers and private vets to access this information. This poster describes an attempt to make this information available via an online mapping tool known as ibTB (Information bTB). The mapping tool is available at:

www.ibtb.co.uk

3. Background to ibTB

For legal reasons, farmers have not been made aware of other bTB breakdowns, even though it may impact upon on their disease risk. In 2014, the TB order (England) was changed with the agreement of agricultural stakeholders to allow Defra to make disease incidence publically available.

ibTB was developed to represent disease data in a searchable online map. Development was in conjunction with the Defra TB policy team, legal experts, the Data Systems Group in APHA, GIS experts and members of the farming industry via Defra's TB Eradication Advisory Group.

Users can search manually by panning and zooming the pan. Alternatively, users can search by CPHH (the holding number every UK farm has) or postcode. Users can search for current breakdowns (updated every month) and for historic breakdowns since 2011. No distinction is made between confirmed and unconfirmed breakdowns (OTFS and OTFW).

The website does not require registration. No personal data is revealed in ibTB

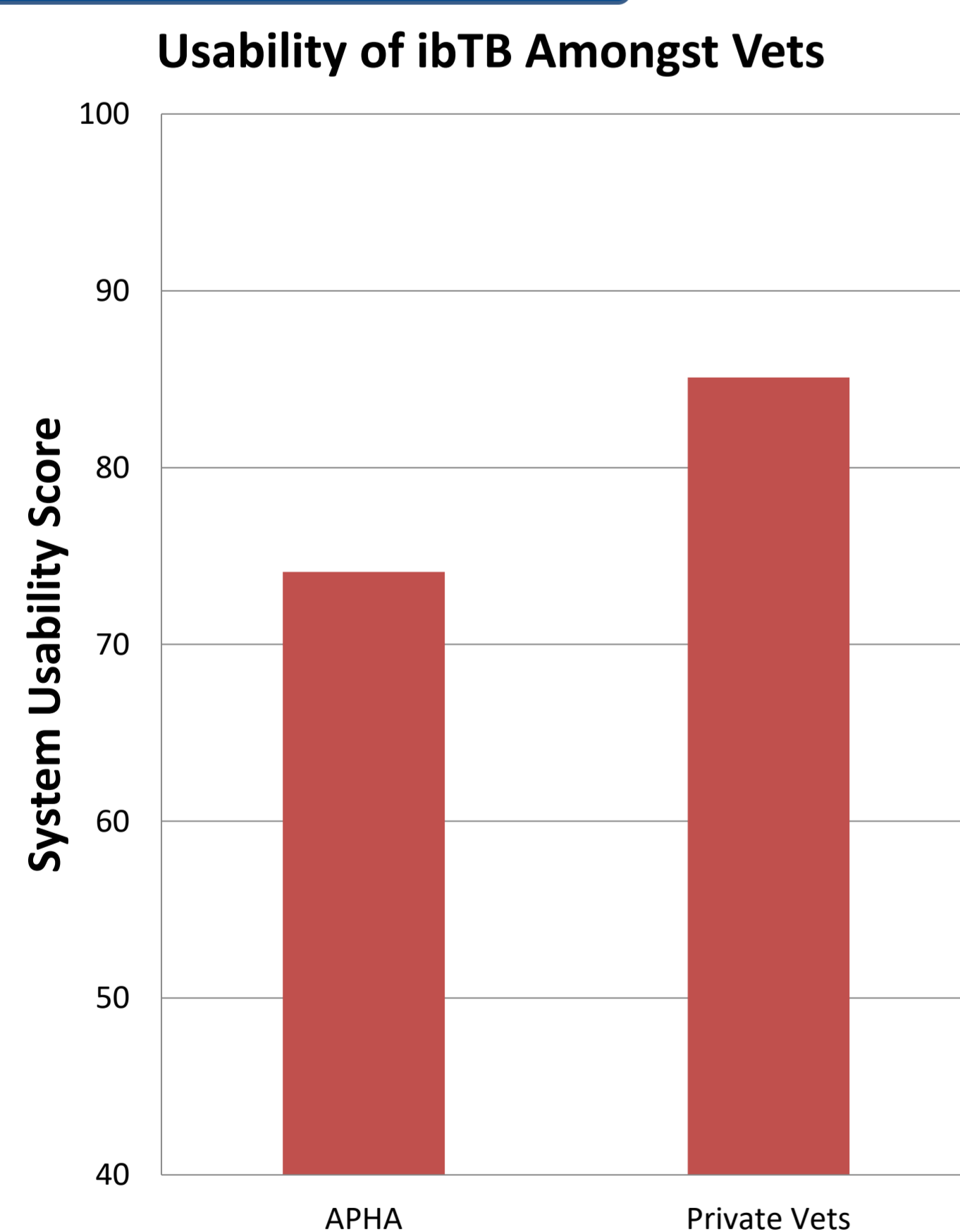
Data from Scotland is not included. Data from Wales will be added in April 2016.

4. Results from Usability Studies

Methods

Previous research has established that a farmers' vet plays an important role in conveying information about bTB (Enticott, 2008). To evaluate the usability of ibTB, vets were asked to complete 5 scenarios using the website. The scenarios reflected expected usage of ibTB such as searching for a farm/area, and replicated activities that vets may undertake for farmer. Usability testing was conducted with nine APHA vets and 16 vets from private practice. For each task, vets rated the ease of completion (1 – 7 scale). The System Usability Scale (SUS; Brooke, 1996) was used to get an overall assessment of the usability of ibTB. The SUS is a set of 10 questions answered on a 1 (disagree) - 5 (agree) scale. Scores from the SUS are combined to give a usability score between 40-100. A score over 68 represents above average usability. Usability trials were recorded using Silverback. This software recorded all screen activity whilst vets were completing the scenarios, as well as capturing them narrate what they were doing and describe any problems they had encountered. Separate observation notes for each vet were also recorded.

Usability of ibTB



Vets who participated in the usability studies rated ibTB as extremely usable.

On the System Usability Scale, the scores were (out of 100):

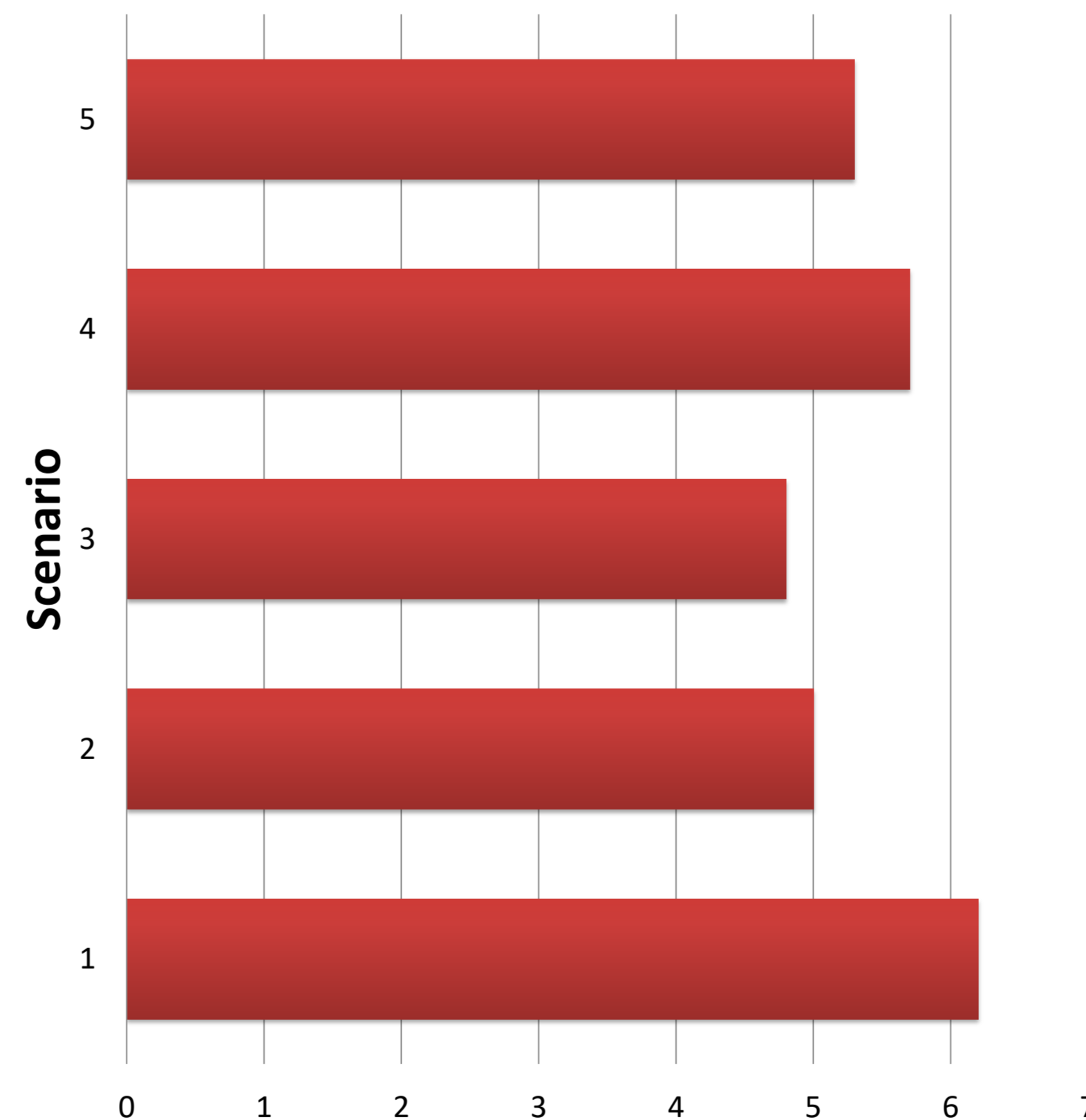
- APHA vets = 74.1
- Private vets = 85.1

The scenarios were also rated generally easy to complete.

- For all vets and all scenarios, the ease of completion was 77%

These results suggest very good usability for ibTB.

Ease of Use of ibTB Amongst Vets



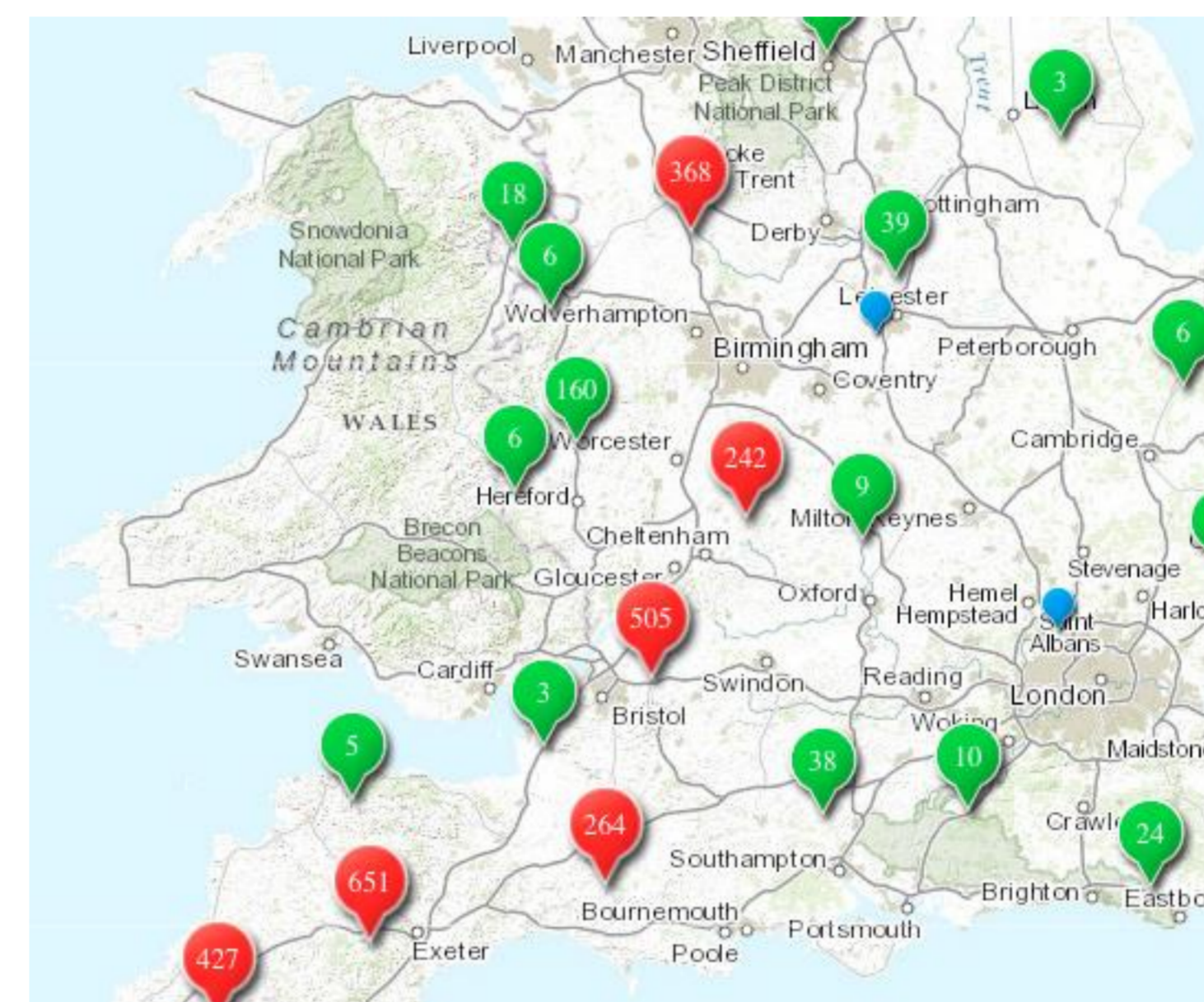
5. Next steps

Next steps:

- Usability tests and feedback has highlighted ways in which ibTB can be improved. A new version of ibTB will incorporate these changes.
- April 2016 will see the release of a mobile friendly version of ibTB and the inclusion of data for Wales.
- Further research on farmers' use of ibTB and the impact it has on their farming practices is planned.

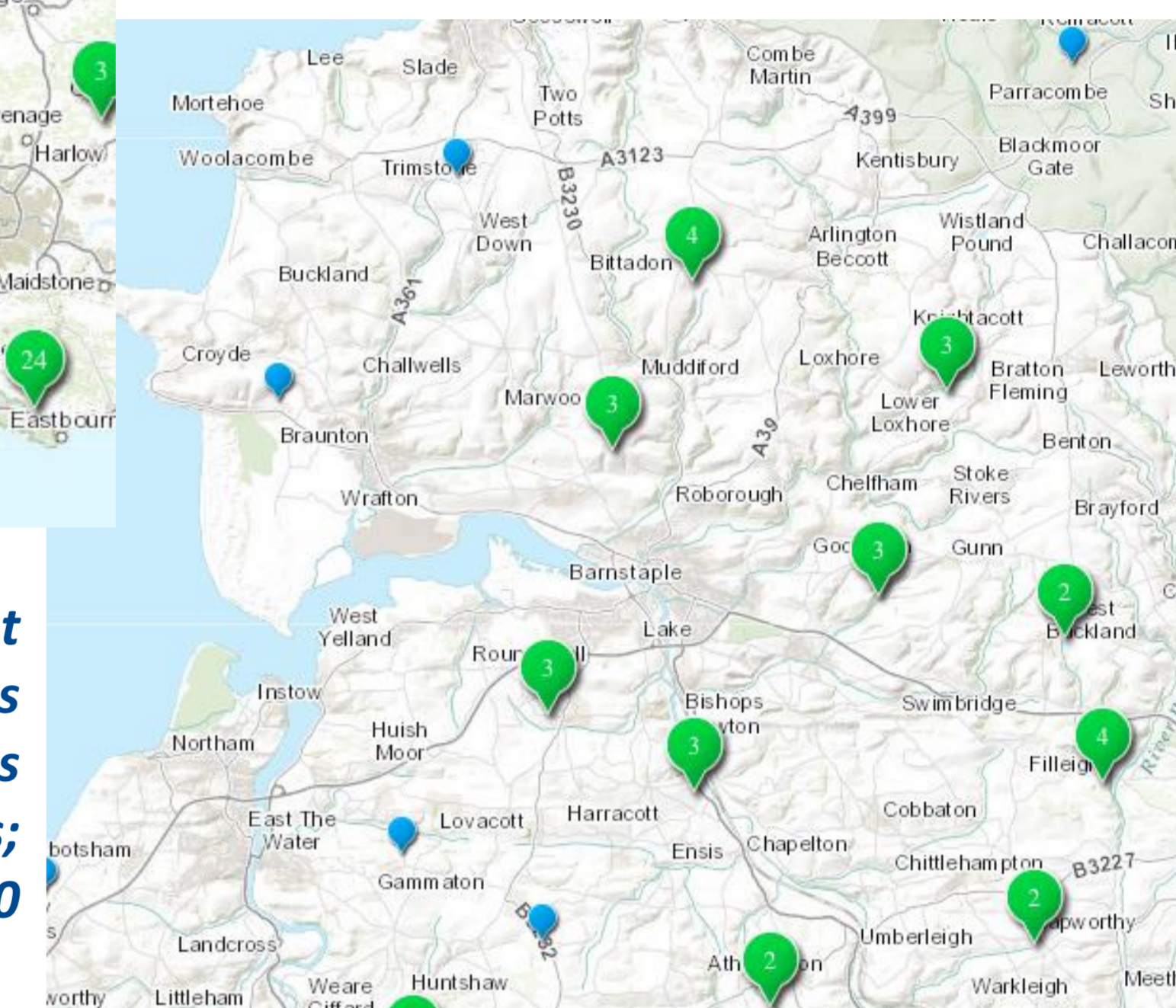
2. Objectives

- Develop an online mapping tool for farmers and vets to identify current and historic bTB breakdowns in England.
- Test the usability of the online mapping tool with vets across England using scenario analysis
- Identify improvements to the ibTB website for inclusion in future versions.



ibTB map at national level showing clusters of bTB breakdowns. Users can pan and zoom the map for greater detail.

ibTB map showing locations of current breakdowns in North Devon. Blue circles are individual breakdowns; green circles are clusters of between 2-200 incidents; red circles are clusters of more than 200 incidents.



The Scenarios Tested

1. What was the bTB status of the last farm you visited?
2. A client has heard that a neighbour has gone down with bTB. Is he right?
3. A farmer asks you about some cattle he's interested in near [location]. What can you tell him about the bTB situation there?
4. A client is thinking of renting some ground near [location]. Are there any breakdowns in the area?
5. You are writing a report about bTB in the low risk area. How many bTB breakdowns were there last year?

Vets' Views of ibTB

Vets saw ibTB fulfilling a number of roles:

- Reassurance – the maps could offer support to farmers in Low Risk and Edge Areas to show they were not the only farmers with bTB and help reduce stigma.
- Improving Knowledge – the maps could help vets develop their epidemiological knowledge of bTB in their local area.
- Advising – vets saw the maps as a conversation starter, potentially around issues such as biosecurity.

However, vets also raised some concerns:

- Reputational Damage – vets did not want to be known as the local "TB Grass" by informing farmers about others' bTB status.
- Data Accuracy – there was concern that without complete knowledge of the breakdown location, inaccurate information and advice could be passed on.
- Data Gaps – some data (e.g. number of reactors) are missing but vets thought that important to make sense of the breakdown.
- Ability to Influence – vets said they had few opportunities to speak to farmers about bTB, and that trading patterns were often too ingrained into the business to change.

References

- Enticott G, 2008, "The ecological paradox: Social and natural consequences of the geographies of animal health promotion" *Transactions of the Institute of British Geographers* 33 433-446
- Brooke J, 1996, "SUS: A 'Quick and Dirty' Usability Scale", in *Usability Evaluation in Industry* Eds P W Jordan, B Tomas, B A Weermester, A L McClelland (Taylor and Francis, London)