BLUETONGUE VIRUS ACTIVE LABORATORY RISK-BASED SURVEILLANCE IN GB (2021-2022)
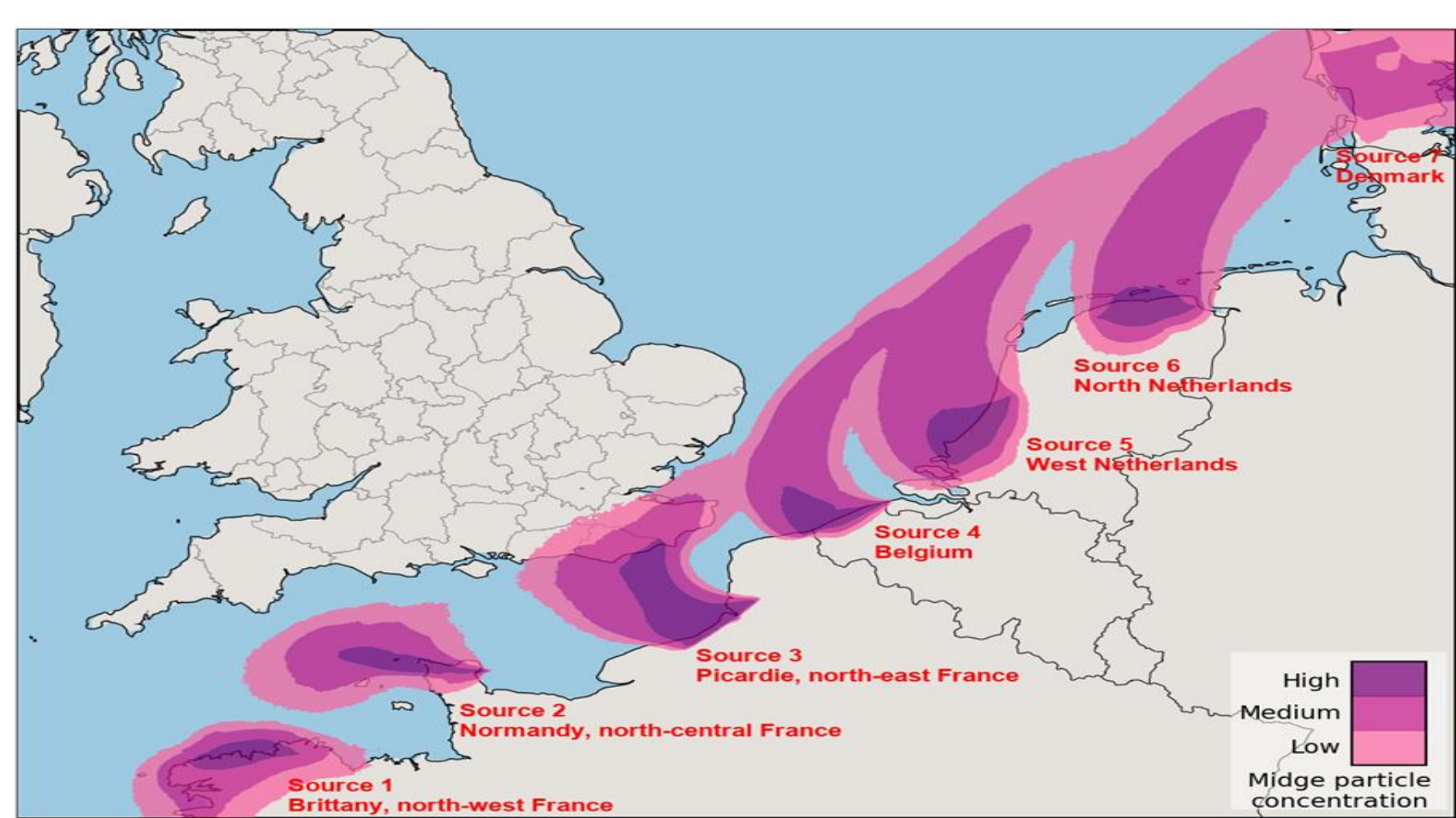
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INTRODUCTION

- Retained EU legislation (Commission Reg. EU No 456/2012) requires **active laboratory-based surveillance alongside passive clinical surveillance** to **detect possible incursions of the bluetongue virus (BTV).**
- Active laboratory risk-based BTV surveillance has been carried out annually in Great Britain (GB).
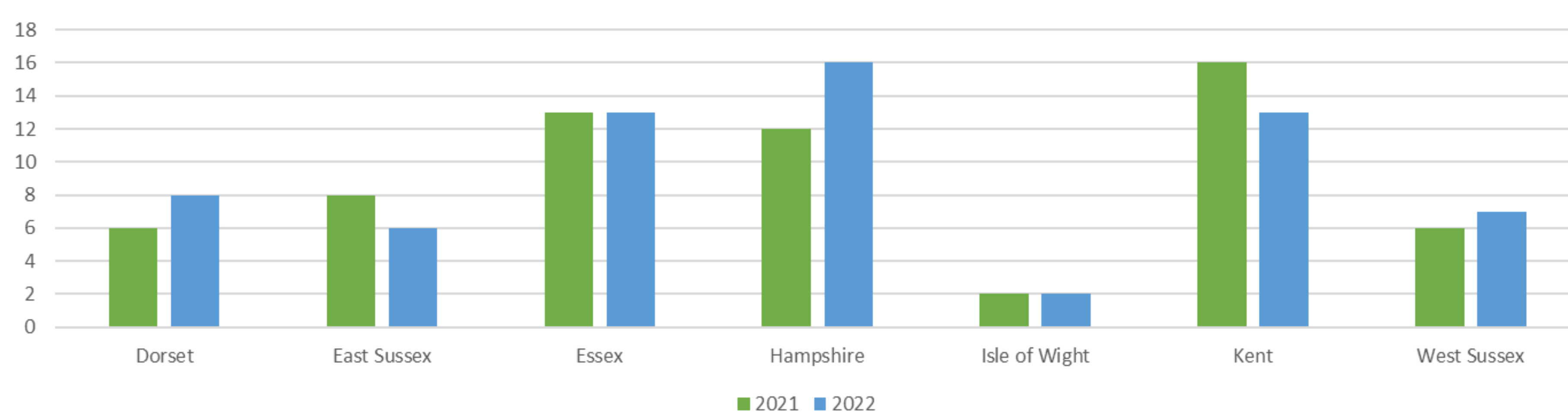
NAME model output example. Plumes show the concentration of modelled midge species particles after 12 hours of airborne transport.

AIM

- This poster presents the **results of active laboratory risk-based surveillance for BTV implemented in GB in 2021 & 2022.**
- **The surveillance was aimed to provide confidence that there had been no undetected incursion of BTV via vectors into GB and build upon other evidence streams demonstrating the GB BTV disease free status.**

ANIMAL ELIGIBILITY REQUIREMENTS

Cattle age: 6-84 months old

Access to pasture required

Homebred or on holding ≥6 months

Not vaccinated against Bluetongue

METHODS

- **Active laboratory based BTV surveillance** in line with **Annex 1 monitoring & surveillance requirements of the retained Commission Regulation 456/2012.**
- **Designed to detect (by PCR) BTV which might have been present during the previous 5 months of the highest risk vector period.**
- **Atmospheric dispersion modelling ('NAME' model) used to identify 'target' counties, i.e. GB counties at a higher risk of wind borne introduction (via BTV infected midges) during the BTV vector season from the nearby European countries under BTV restrictions.**
- **Risk criteria used to identify, within each target county, cattle farms for sampling and animals within each farm:**
  ➢ unvaccinated against BTV
  ➢ between 6 and 84 months of age (N.B. until 72 months old for 2021 survey)
  ➢ exposed to vectors during the vector season, etc.
- **Sample size designed to detect at least one positive animal if the prevalence was 5% or greater, with 95% confidence.**
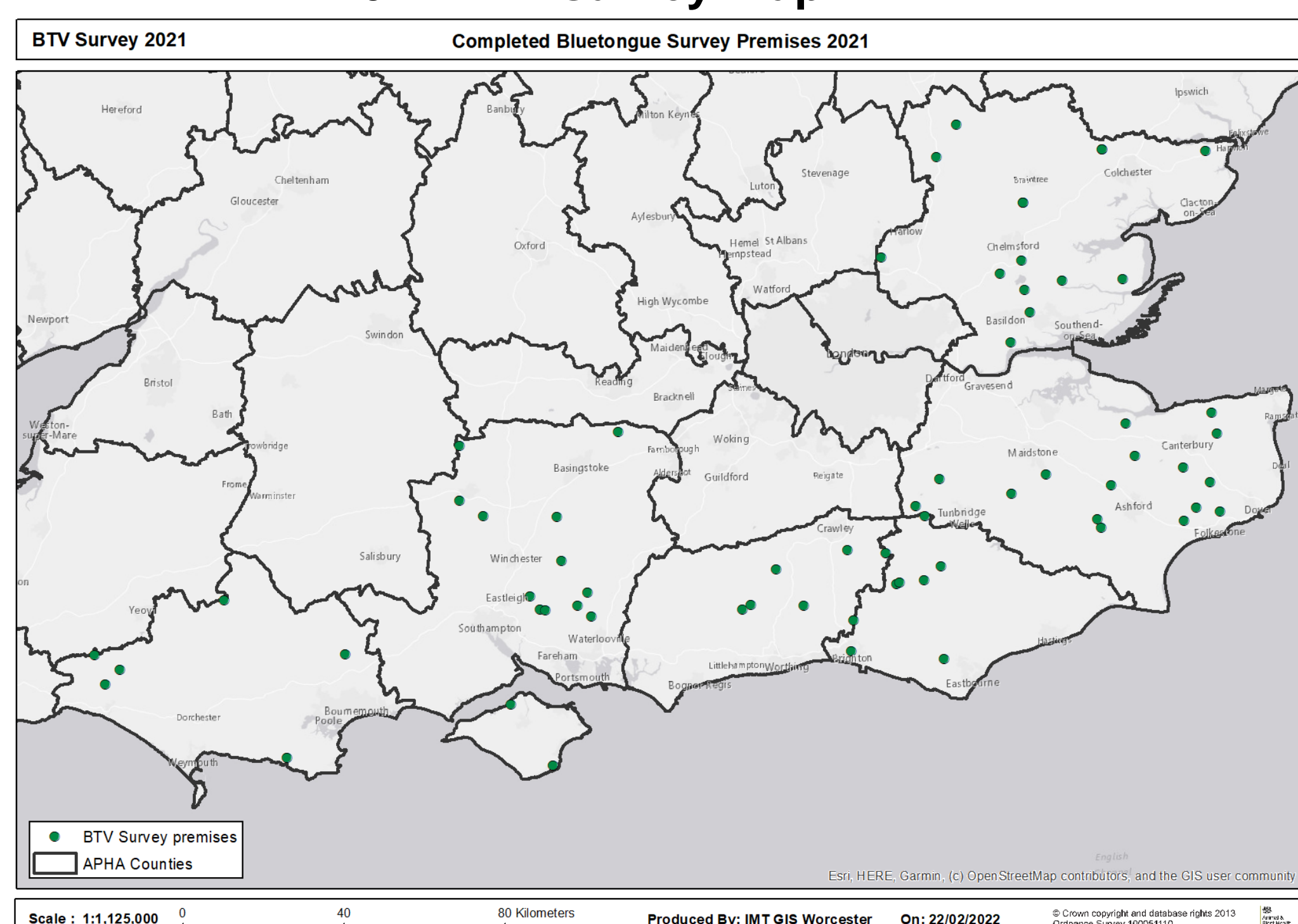- Blood samples tested in pools of five by **real-time RT-PCR.**

RESULTS

- In **2021 and 2022, 7 counties** respectively were included in the survey: namely Essex, Kent, East Sussex, West Sussex, Hampshire, Isle of Wight, and Dorset.
- **Sixty-five farms were sampled in 2021 and in 2022 respectively**.
- Of the **977 and 971 samples** collected in 2021 & 2022 respectively, **all tested negative by BTV group specific Real-time RT-PCR.**
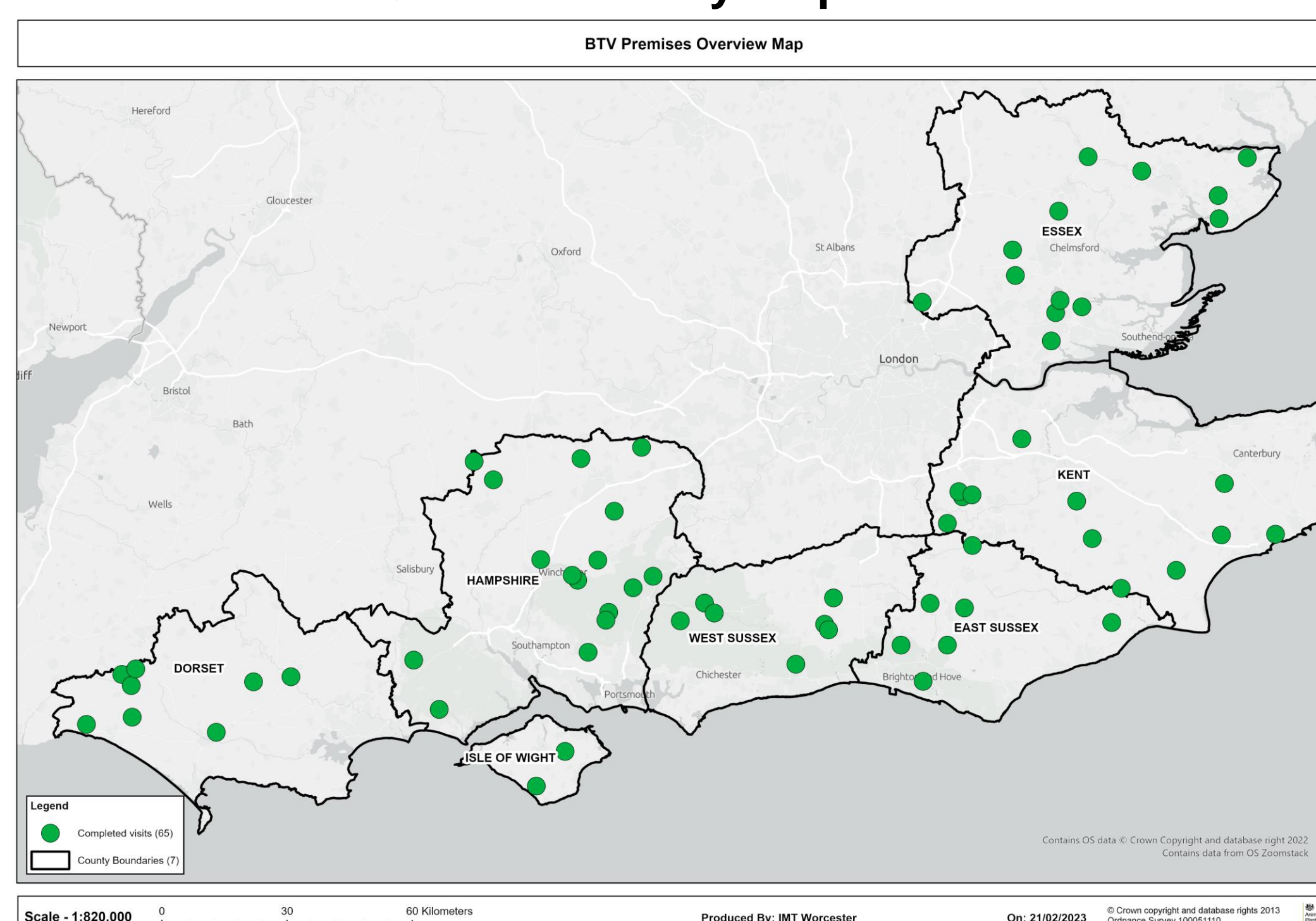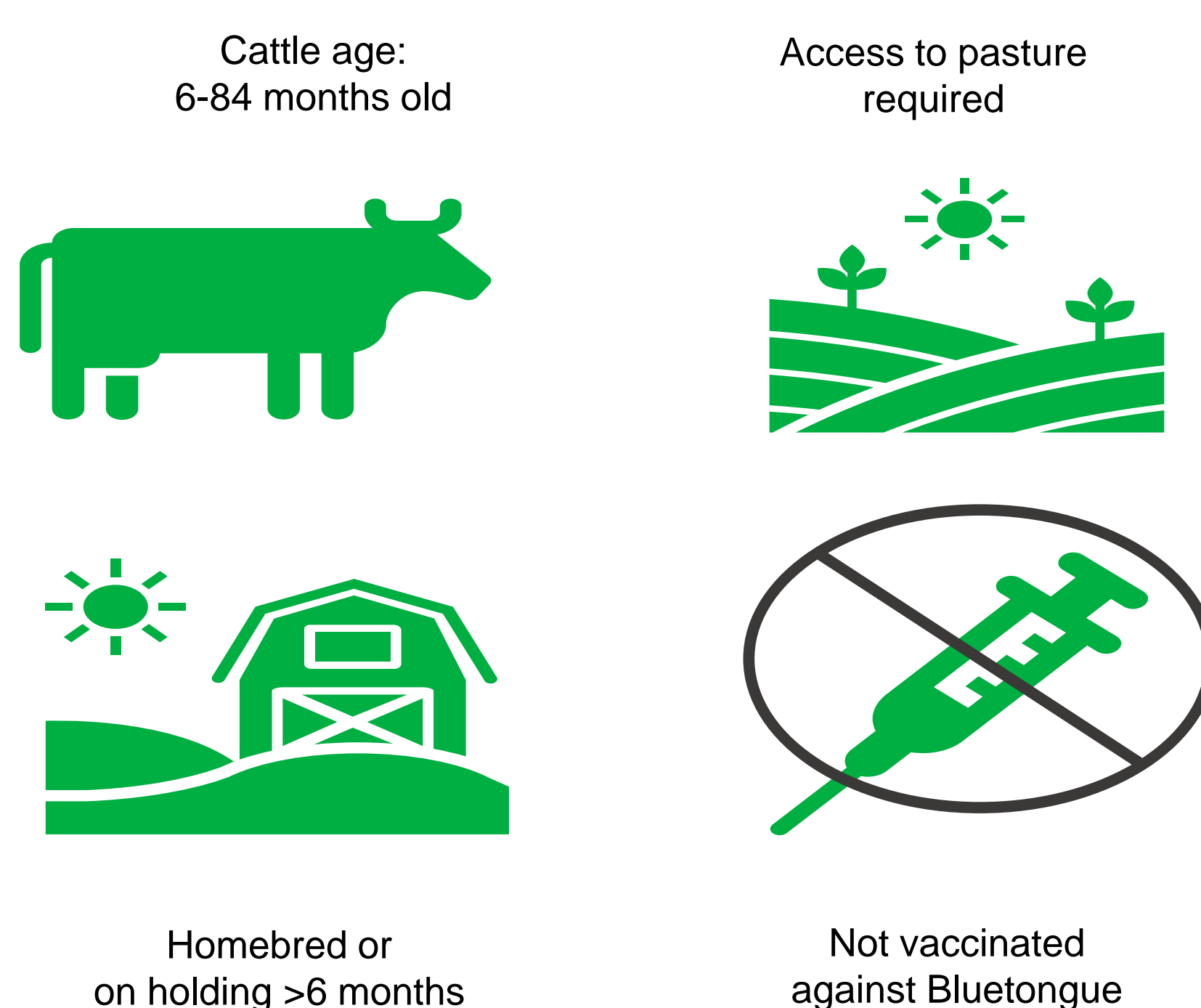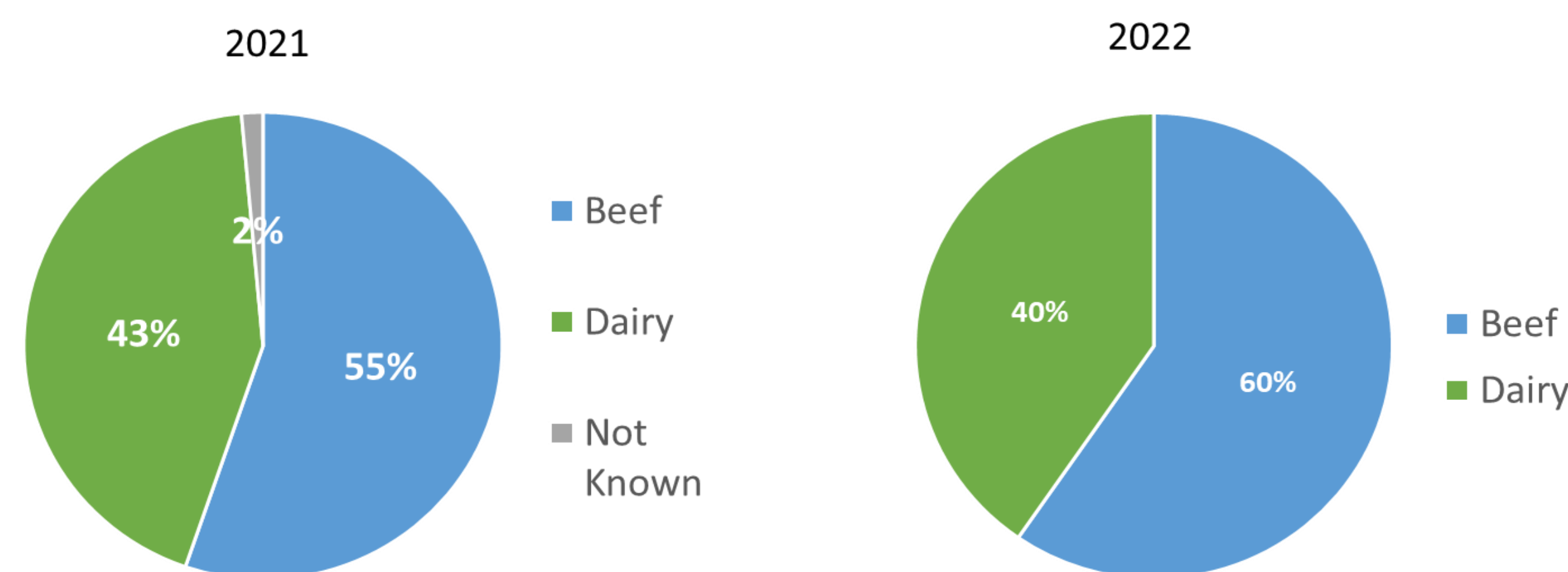
Production category of animals sampled

2021 — Beef 55%, Dairy 43%, Not Known 2%

2022 — Beef 60%, Dairy 40%

Number of farms tested per county

CONCLUSIONS

- **Active laboratory-based surveillance** was carried out **to detect BTV in a geographic region of GB considered to be at greatest risk of incursion by BTV-infected midges** from countries in Northern Europe under BTV restrictions.

- **All samples tested negative** for the presence of BTV RNA using real-time RT-PCR.

- **Level of surveillance was sufficient to be 95% confident** that **at least one positive animal would have been identified if the prevalence had been ≥5%** in each of the geographical units investigated, **during the part of the year when an incursion was most likely to have incurred.**

ACKNOWLEDGEMENTS

- The farmers who volunteered their time and cattle for inclusion in this surveillance programme.
- The Veterinary Delivery Partners (VDPs) for the sampling, and UK Farmcare for the farm recruitment the VDPs' coordination and management.
- A number of APHA colleagues for their work on the surveys' design, implementation and management.
- UK administrations for direction on the policy requirements.

2021 BTV survey map

2022 BTV survey map