Questions from the Bluetongue disease (BTV) information meeting for Island livestock keepers.

How prevalent are potentially infectable midges in the Hebrides?

The abundance and species diversity of midges in the Hebrides has not been looked at as far we're aware. A Scotland-wide survey[1] of midges in 2007-2009 in response to the BTV-8 outbreak included a site at Portree, Isle of Skye. Midge species capable of vectoring BTV were identified at this site alongside the ubiquitous highland midge. It would be prudent to assume that BTV can be vectored by local midges at any location in the Hebrides that experiences a BTV outbreak.

What is the likelihood of the Highland Midge evolving to be able to become a vector for Bluetongue?

The highland midge is considered a very poor potential vector of Bluetongue[2]. In the literature and in our (EPIC) discussions with midge ecologists this is caveated by the very high densities that these midges can reach which may offset their poor ability to spread disease. It may require quite major changes to the biology of the highland midge for it to become a better vector of BTV, including changing from not taking a blood meal for the first clutch of eggs (autogeny) to taking one.

This is all possible and natural selection has a habit of springing surprises on us but a more likely scenario in the near future is that climate change alters the population dynamics of existing species that can vector Bluetongue in Scotland such that the risk of disease spread is enhanced. Furthermore, in a warmer climate may allow invasive species of midges capable of vectoring Bluetongue and other diseases to establish themselves in Great Britain.

With climate change, is there a prediction of if or when different midge species may travel further North?

The threat is real. The type of Culicoides midges that are widespread in Scotland are a competent vector for bluetongue. Additionally, with the modelling done by the Pirbright institute, the cumulative temperatures that we've seen indicate that we could potentially have disease transmission trough competent midges across all of Scotland.

That's without taking into consideration climate change which has been a global driver of this and other vector borne diseases, and this can be seen clearly in mainland Europe, with bluetongue virus, Schmallenberg virus, Shamonda virus, lumpy skin disease and others. In Scotland, we've even seen the detection on Isle of Aran of Usutu virus in blackbirds: this is a virus that operates at a much higher minimum temperature range than bluetongue.

Will the traceability of infected animals be rigorously maintained?

Traceability is a cornerstone of our farm to fork system, that underpins disease prevention and control – that is for all diseases and not just bluetongue. There is legislation in place setting rigorous ID and traceability standards as well as movement recoding and register of holdings. Additionally, we require animal which have tested positive be restricted to the holding for a minimum of 60 days, to avoid taking active infection elsewhere through animal movements.

Further, any animal showing clinical signs is also legally required not to be moved from their holding. Unfortunately, given that majority of transmission is through midges once disease gets established in a new area, the efficacy of livestock movement controls at containing it is reduced.

BTV-3 is now treated in GB as an endemic disease, for which the most effective control measure is vaccination. So, we strongly urge keepers to speak with a private vet to consider vaccination of their stock. In that conversation, farmers are also encouraged to consider other risk reducing management decisions, for instance, if they must purchase animals, try to source them from areas with lower risk.
Farmers can also consider the seasonality of the bluetongue and adjust their breeding timings to reduce risk.

View a map of the latest overview of Bluetongue cases and zones via the Animal and Plan Health Agency (APHA) website.

Would a tup have to show clinical signs to become infertile?

Infected tups become infertile mainly because of the high temperature and replication of virus in the reproductive tract (which causes inflammation/orchitis). It takes about 6 weeks for spermatozoa to mature, so usually infertility last for about 6 weeks.[3]

Fever is a clinical sign of BTV, but they might not show other (more obvious) clinical signs and still become infertile. So, no, they might not show "clinical signs" but still be infertile. Bulls even more so.

Is it possible for the vaccine to make tups infertile?

There is no evidence, at the moment, that an approved BTV vaccines, which have been used in millions of animals across Europe under official pharmacovigilance systems, would reduce fertility. There is always the possibility of a tup developing fever after the vaccination, which would impair fertility (see answer above). However, the risk of developing fever is much greater with the disease than with the vaccine.

Could you expand on the likelihood and timescales of new strains of the virus developing?

There are currently 36 serotypes recognized worldwide. There is always a possibility of new strains developing or being discovered, however at present only BTV-3 is circulating in the UK.

Government conducts regular surveillance for all serotypes of bluetongue as well as other vector borne diseases (such as EHDV) and our horizon scanning and early warning systems will be able to tell us which ones to be look out for.

Is there an optimum time to vaccinate and will there be enough vaccine available?

Sheep just need to have the single dose and three/four weeks depending on the vaccine, after that they should have their immunity. Cattle need a double dose, once and then three weeks after for that second dose, so slightly different from sheep.

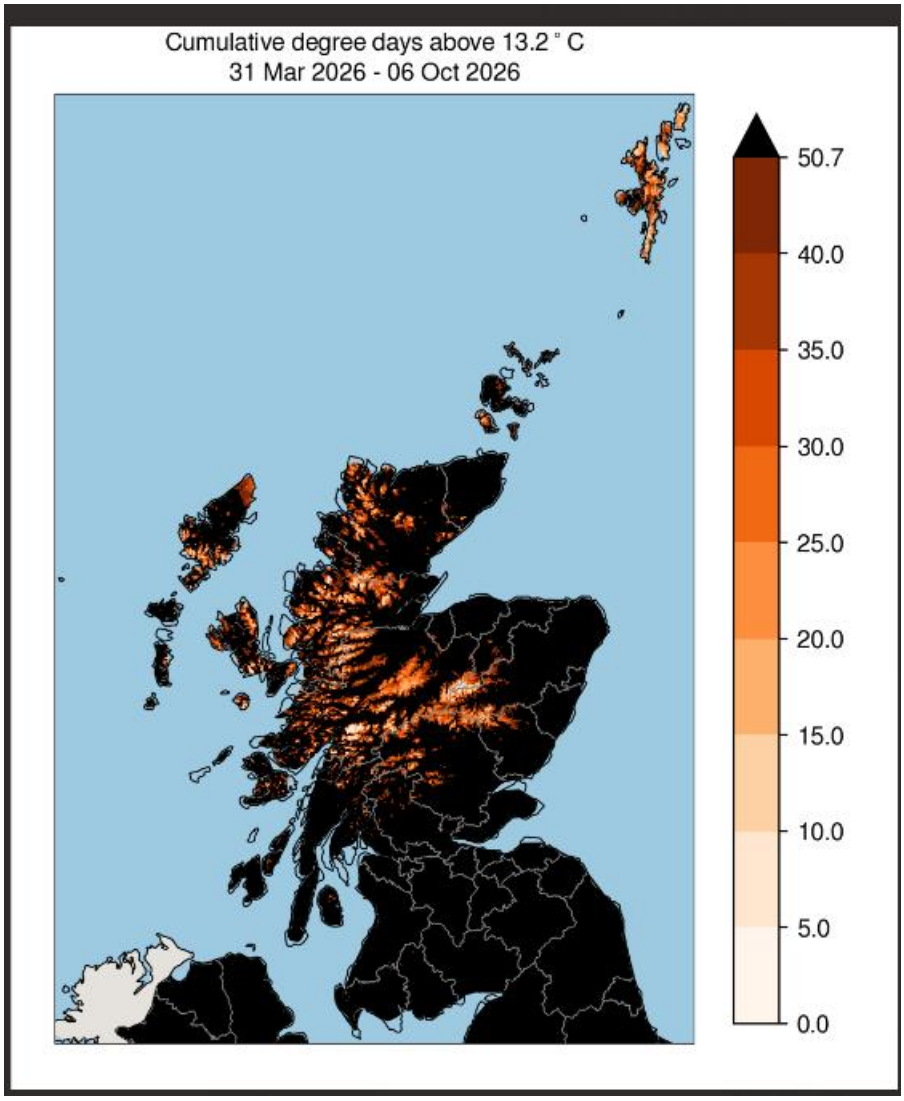
As long as the sheep are vaccinated and the immunity has had time to occur before the vector season, and they're allowed to be vaccinated when pregnant. So, it'll depend on each farm's individual setup and what works in their management system.

Additionally, what can be available might be different for different vet practices and what they can order with wholesalers; please contact your own vets for advice.

What is the likelihood of disease transmission in Shetland? We have low summer temperatures and higher average wind speeds and are further from the mainland. What does your modelling show for us?

Shetland was one of the few places in Scotland with pockets of land where it did not get warm enough in 2026 for infected midges to spread the disease further, but parts of Shetland can, as can be seen by the black areas in the map. There is a big caveat in these maps that temperatures are recorded in weather stations sitting outside and averaged out, whereas microclimates at the bottom of valleys and inside sheds could create significantly warmer pockets of temperature.

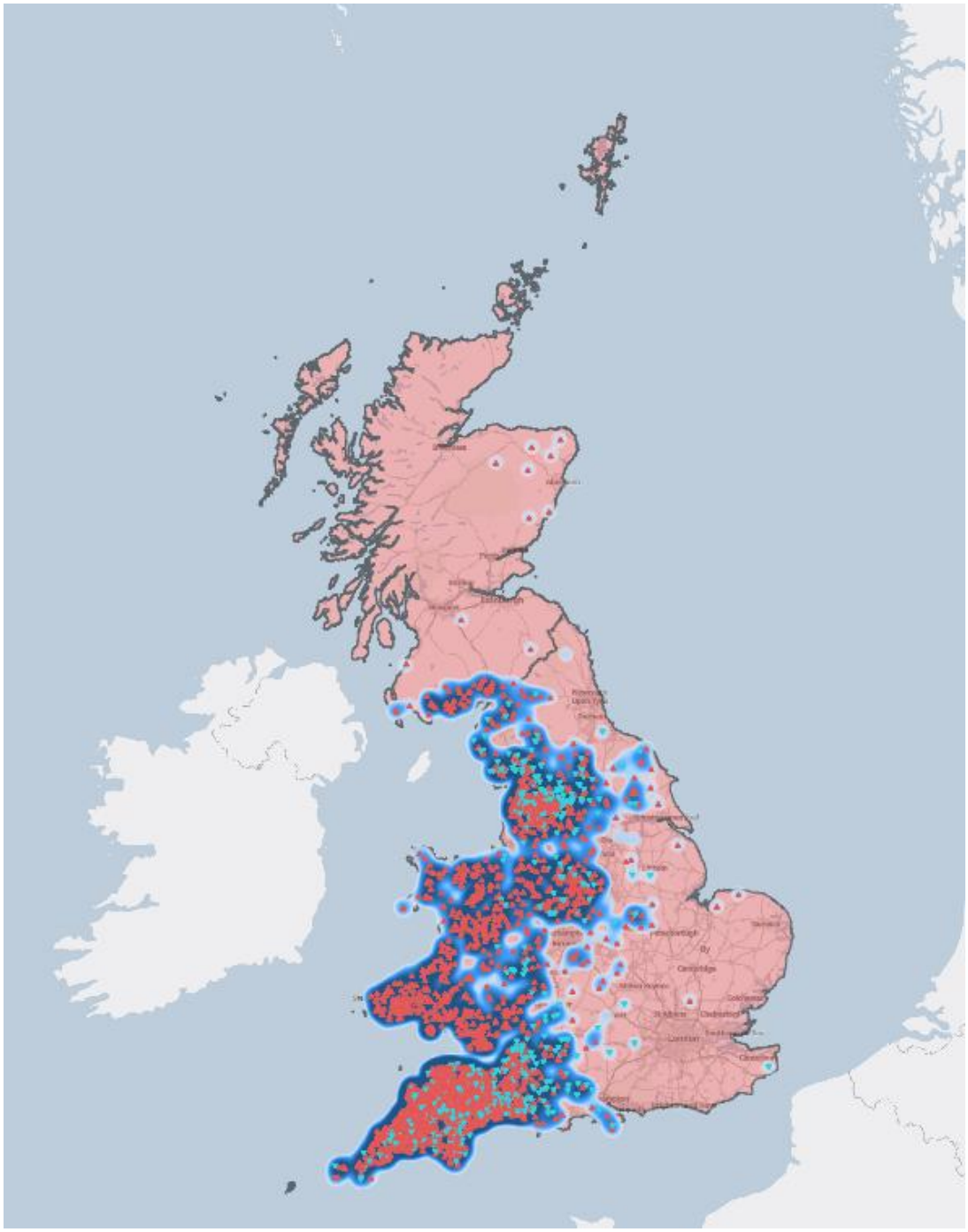
In the vast majority of Scotland in 2026, except in the highest and windiest places, there has been enough accumulation of temperature to allow midges to complete the extrinsic incubation periods and become infectious with BTV and so capable of infecting further animals. 2026 has been warmer than average and in colder year the overall risk would be lower but never zero. Unfortunately, the weather is very hard to predict.



Additionally, if bluetongue can spread within Shetland, it needs to arrive there and there are two aways for that to happen: midges being blown over from the mainland which seem less likely, or infected livestock brought into the island and then being bitten by local midges. Given that there are no controls on animal movements now, BTV could get to anywhere in Scotland through an infected animal, or through a pregnant animal that was infected and cleared disease but gives birth to in infected calf (or lamb). Depending on the area and local temperatures that may lead to local circulation.

It is possible to see from the map that there are areas that have not reached that critical number of warm days during the whole of 2026, but most areas have.

Advice on movements: If you must buy in animals, avoid higher risk areas. See the APHA cases map. Please note that the absence of detected cases does not mean disease isn't in a given area, as some animals especially cattle do not show obvious clinical signs.



APHA BTV case map - October 2026

The red triangle and blue clouds are the higher risk areas. Avoid bringing animals from there, if possible, but if you are bringing animals, there's two options. You can ask people to sell them already vaccinated and with full immunity (not just ‘jab and go’, but jab, wait the required period of 21 days, and then move, which is still not zero risk, but it does quite a good job of reducing risk). And on top of that, you can also ask them to be pre-movement tested or post movement test them yourself.

Overall, exercise responsible purchasing for BTV and any other disease. Speak to your own vet about vaccinating your own animals, consider your levels of risk.

Will vaccinating a pregnant ewe pass immunity on to the lamb?

Immunity is passed to the lamb provided it is fed with the vaccinated ewe's colostrum, and the ewe was vaccinated while in good condition to produce significant antibodies. The antibodies will usually decrease in the first weeks/few months of life, so lambs will need to be vaccinated as well. Please check the data sheet of each vaccine for recommended timing of vaccination for lambs.

Would it make sense for Shetland to remain out of the restricted zone for 2027? What would that look like?

The whole of Scotland was declared a restricted zone and that was on the advice of industry including assurances by NFUS that the membership on the islands was consulted. This was taken as a consensus that the impact of the economic impact of the restrictions outweighed the risk of disease, especially when there are effective vaccines. The legislation permits the introduction of licence controls such as movements under licence for the for islands, if that was desirable but there would be various factors to consider such as what controls, where and by whom, and how that would be enforced. It would require further discussion which we are open to, through some form of public consultation over the low vector period.

What is the availability of testing likely to be in 2027? Will private testing be available?

The Moredun Research Institute is planning to offer testing from mid-November 2026.

Can we get the temperature data that Amy had with a northern location?

Met office data is readily available online for your local area.

How long is the vaccine effective for?

Keepers should consult the datasheets for the vaccines to update information. Some vaccines already have a guaranteed 12-month duration of immunity, others claim 12 months but are pending approval of their dossiers by the Veterinary Medicines Directorate.

With more wanting to vaccinate, will it be available in 2027?

Yes, but vaccine availably is demand-led. Vaccines have a refrigerated shelf life so it is critical that manufacturers and wholesalers have reasonable certainty of demand and the way to do that is plan and talk with your vets so they can place an order in time.

If there is a vaccine shortage, are there categories of animals that should be prioritised that are more vulnerable to disease?

Farmers often prioritise the most valuable animals, such as breeding and pedigree stock, but beyond that there can be ethical issues with prioritising types of animals, or areas of the country. For instance, sheep do suffer more severe clinical signs with BTV however cattle act as the main source of virus for new midges to get infected. This is ultimately an individual decision by farmers for their animals in discussion with their private vet to choose what is right for them.

Is there a waiting period between vaccinating for BTV and other vaccinations?

There are multivalent vaccines for animals which were manufactured and tested in that presentation, but these BTV vaccines are relatively new and have not been tested specifically for the purpose of being administered with other vaccines. This is not to say it would be wrong or harmful to administer them with other vaccines – we just do not know. This would be a decision depending on various factors, ultimately a question to be discussed with your private vet and decide what is right for you.

Does Bluetongue disease only affect sheep and cattle? Can it affect other animals, such as horses and donkeys?

BTV affects all domestic and wild ruminants, each serotypes shows different severity (e.g. particular severe in sheep). Deer and camelids are also affected.

Citations and resources

[1.] APS/846/07. An Assessment of Presence, Distribution and Abundance in Scotland of *Culicoides* Midge Species and their Potential as Vectors of Animal Disease. DISTRIBUTION: Scottish Government, IAH Pirbright, University of Aberdeen, Scottish Agricultural College (now SRUC), Centre for Ecology & Hydrology (Edinburgh), Advanced Pest Solutions Ltd. 2009.

[2.] Jennings DM, Mellor PS. The vector potential of British Culicoides species for bluetongue virus. Veterinary microbiology. 1988 May 1;17(1):1-0.

[3] Martinelle, L., et al., Semen Quality in Rams Is Severely but Temporarily Affected by Bluetongue Virus Serotype 3 Infection. Viruses, 2025. 17(10): p. 1371.

Latest overview of Bluetongue cases and zones. Animal and Plan Health Agency (APHA): https://experience.arcgis.com/experience/4867f4e1f680415898482df7aabb703d/page/Page/

Met Office weather data, including Long range forecast: https://www.metoffice.gov.uk/