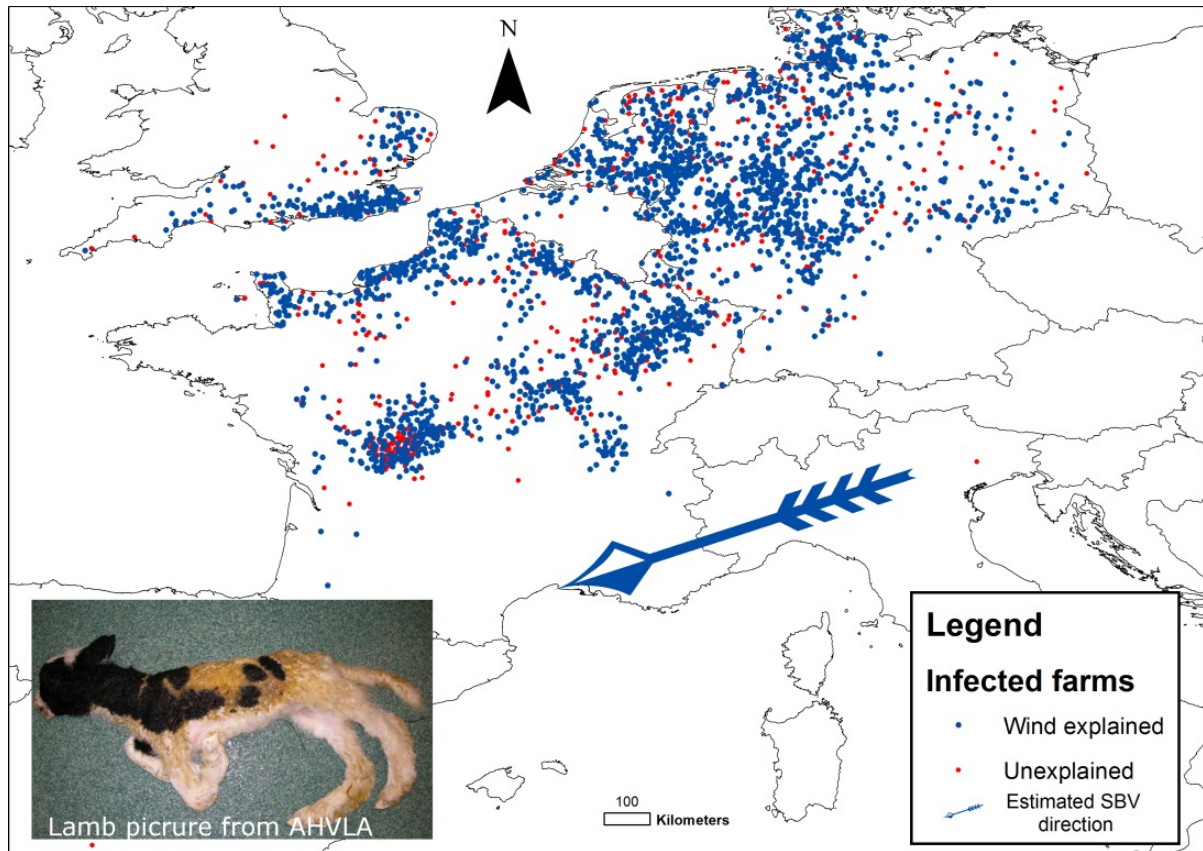


**JOINT GEOGRAPHY AND ENVIRONMENT SEMINARS
AND DISEASE ECOLOGY MEETINGS SEMINAR**



**The effect of the wind in the
recent spread of the novel
Schmallenberg virus in North
Europe**

12.30 14TH OF MAY 2014

Lecture Theatre B, Shackleton Building 44

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Abstract

Between summer and autumn 2011 an unknown disease was discovered among cattle, sheep and goats in North Europe. The clinical signs were diarrhoea, fever and reduction in milk yield for a short period of time. Two months later during the lambing period, an unusual large number of birth malformations (concluding in the death of the newborns) were reported for the same areas. This disease affecting adults animal with mild symptoms and foetuses with deadly defects was caused by Schmallenberg virus (named after the German town where the virus was first detected). Schmallenberg virus is a novel virus of unknown origin, and its group (*Orthobunyavirus*) was thought to be absent from Europe.

Schmallenberg disease spread in most of Europe at a rate unprecedentedly recorded for similar diseases (i.e. Bluetongue), affecting thousands of farms from Sweden to South Spain. After one year from the first disease detection, scientists found in midges of the genus *Culicoides* one of the vectors of this disease. Biting midges are haematophagous insects, vectors of other important livestock diseases such as bluetongue, African Horse sickness and epizootic Haemorrhagic disease.

In this seminar the Schmallenberg disease system, outbreak and the effect of the wind in its spread are presented. The latter was investigated using a stochastic algorithm from which it was possible to describe the prevalent downwind movement of the midges and hence of the disease, and the timing of the infections (1).

1. Sedda, L. and Rogers, D. J. (2013) The influence of the wind in the Schmallenberg virus outbreak in Europe. *Scientific Reports*, 3: 3361 ([doi:10.1038/srep03361](https://doi.org/10.1038/srep03361)).