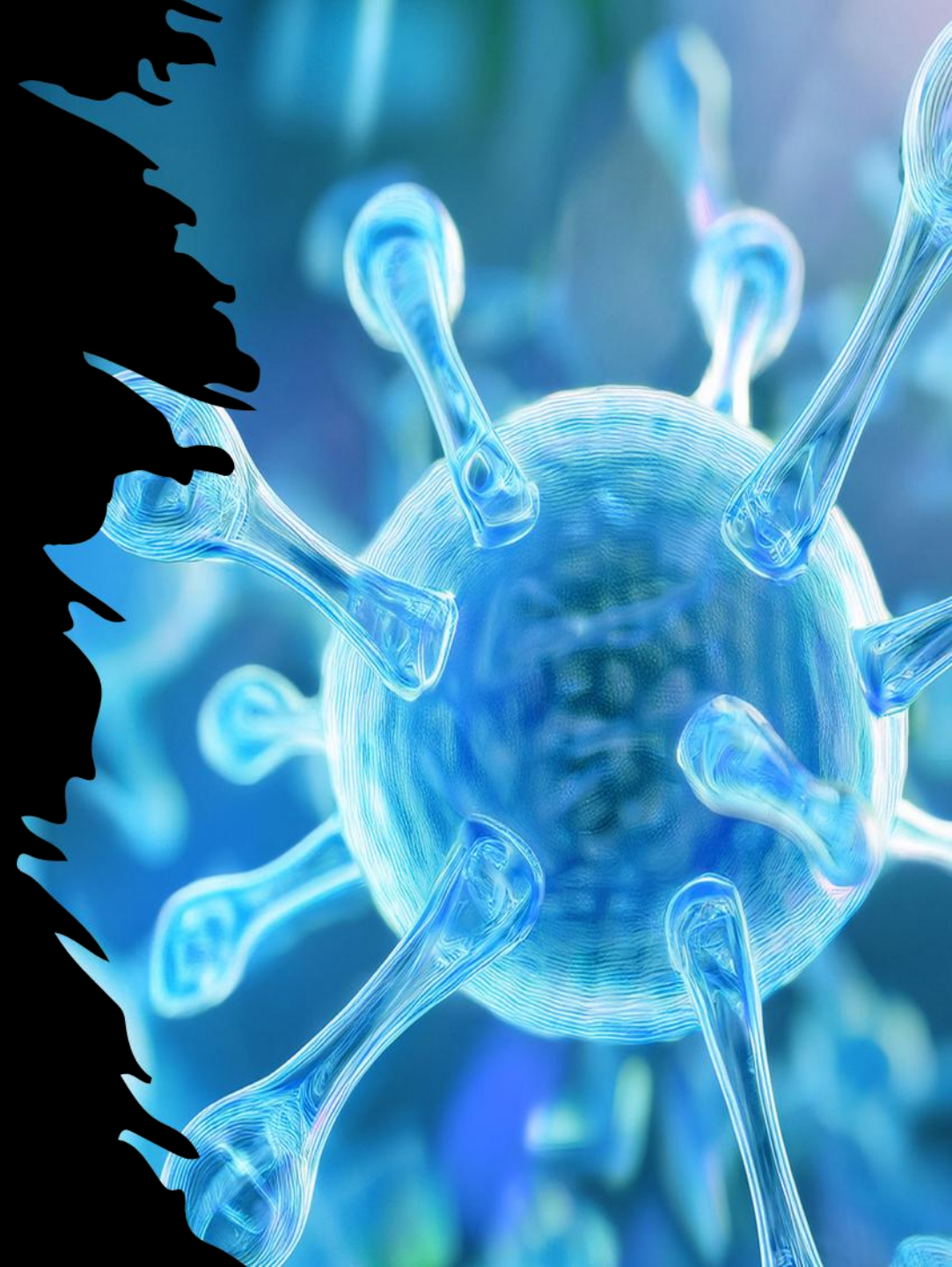
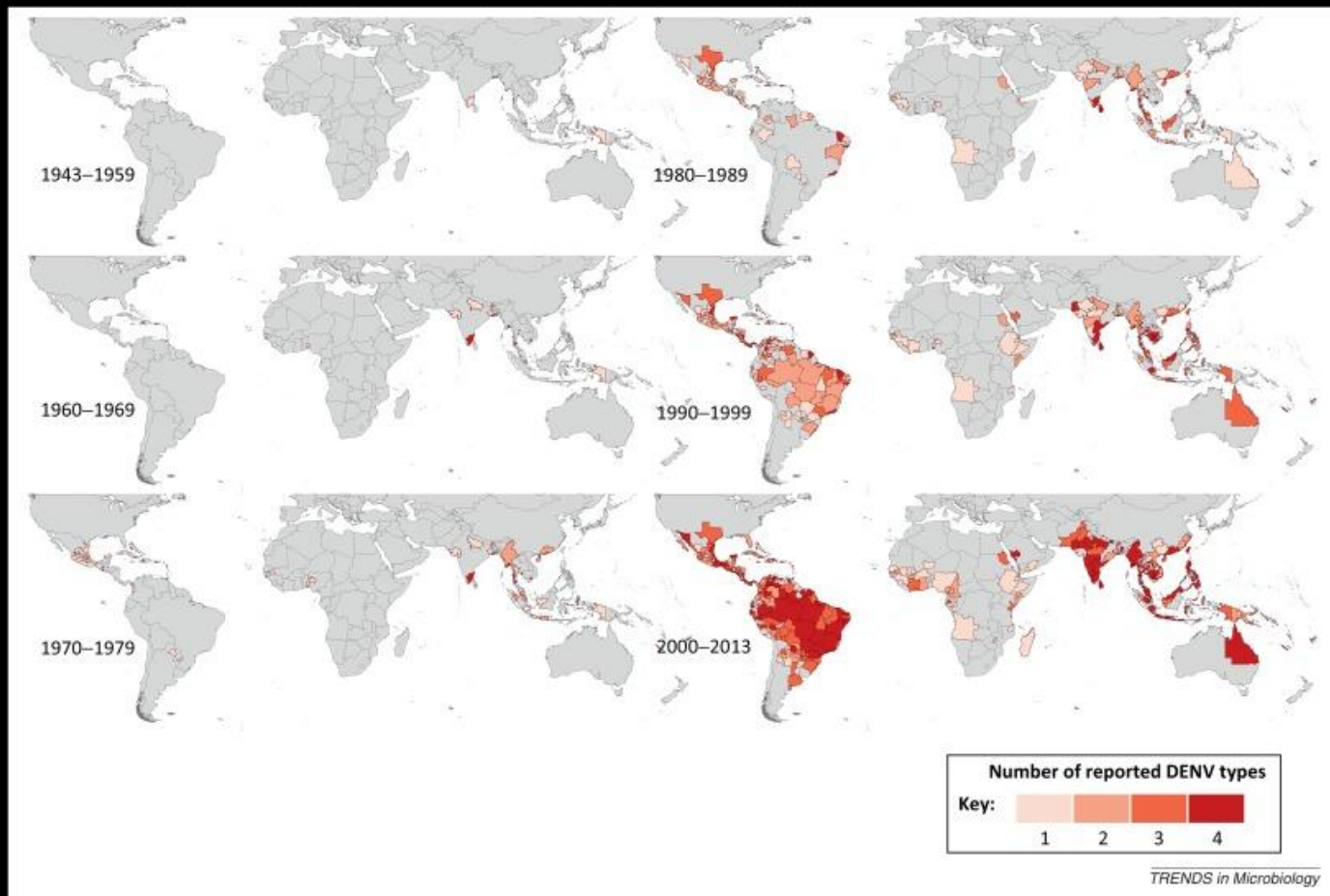




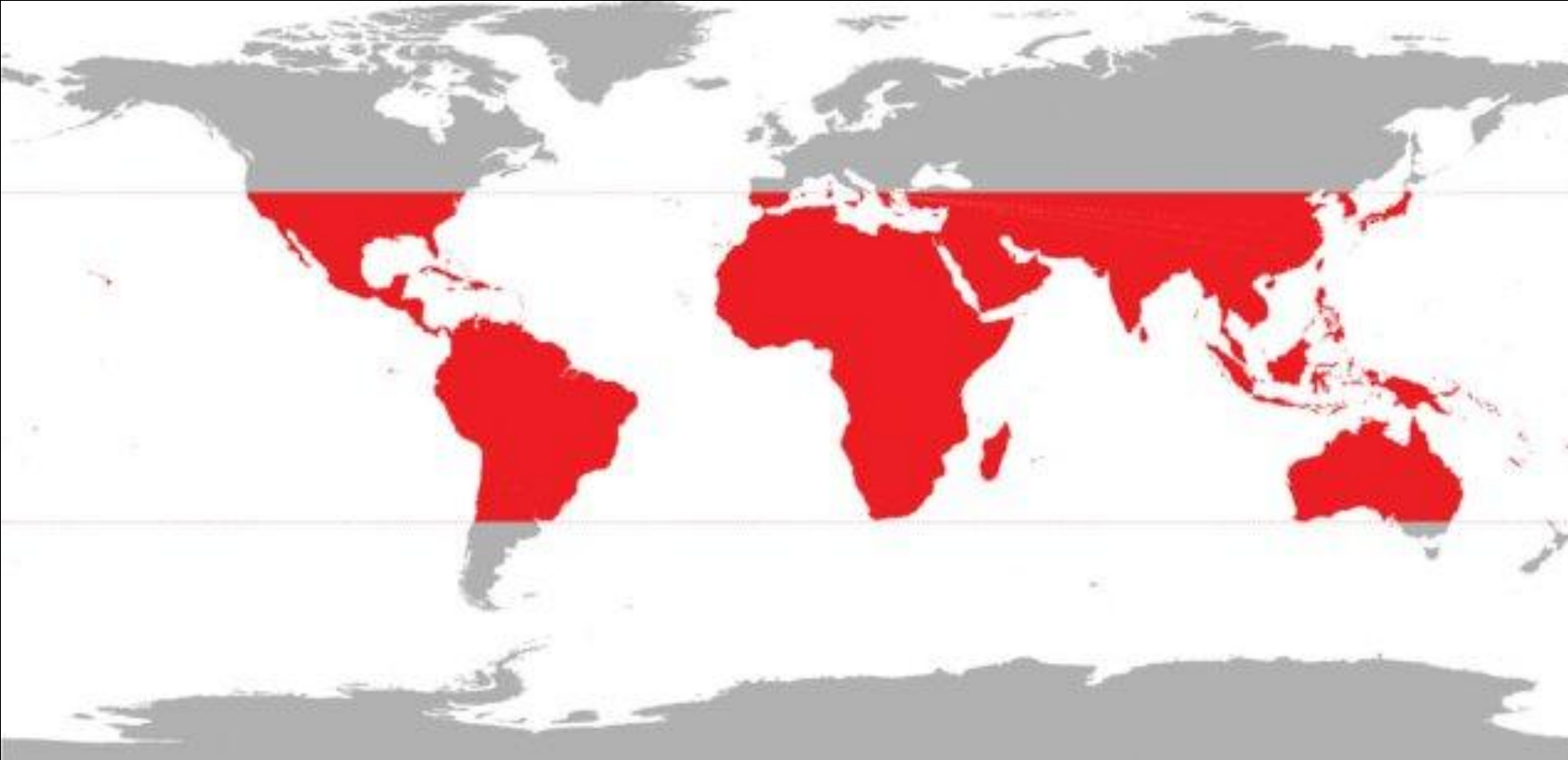
Climate Change and Equine Infectious Diseases: an International Perspective

Alan Guthrie
Equine Research Centre
University of Pretoria
Onderstepoort
South Africa

Dengue Virus Fever



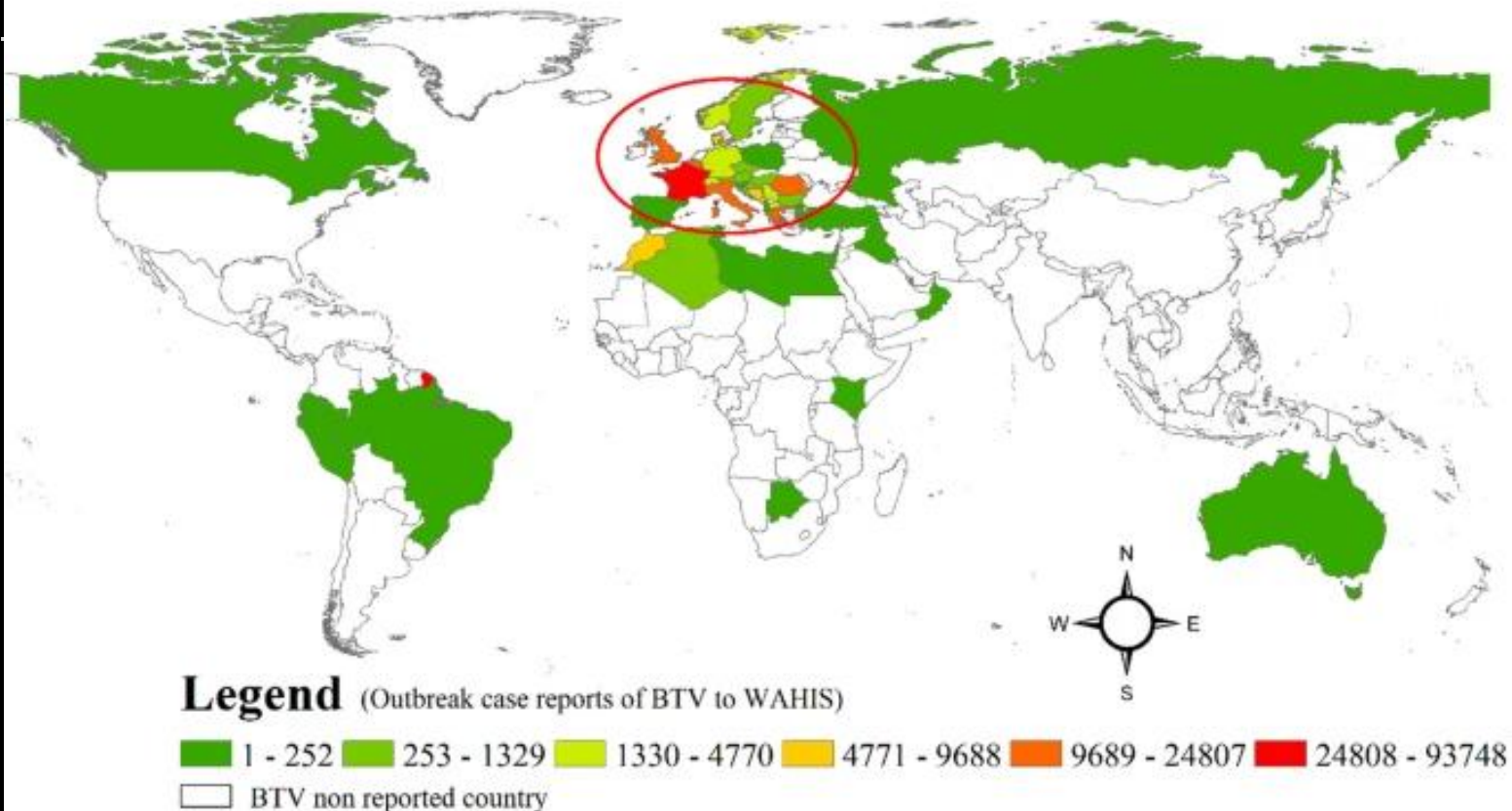
Bluetongue Virus



Bluetongue Virus



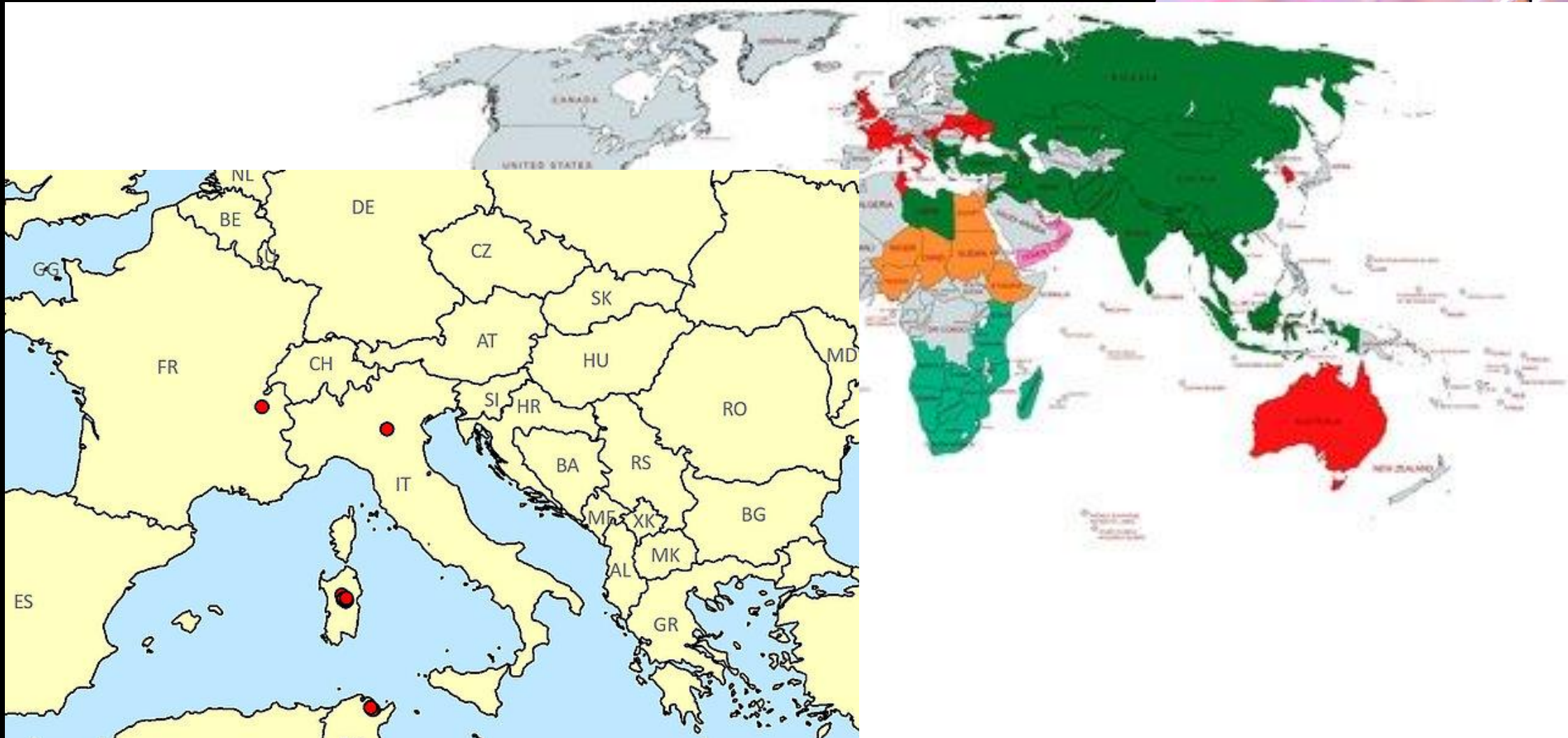
Global Outbreak Report of Bluetongue 2006 to 2025



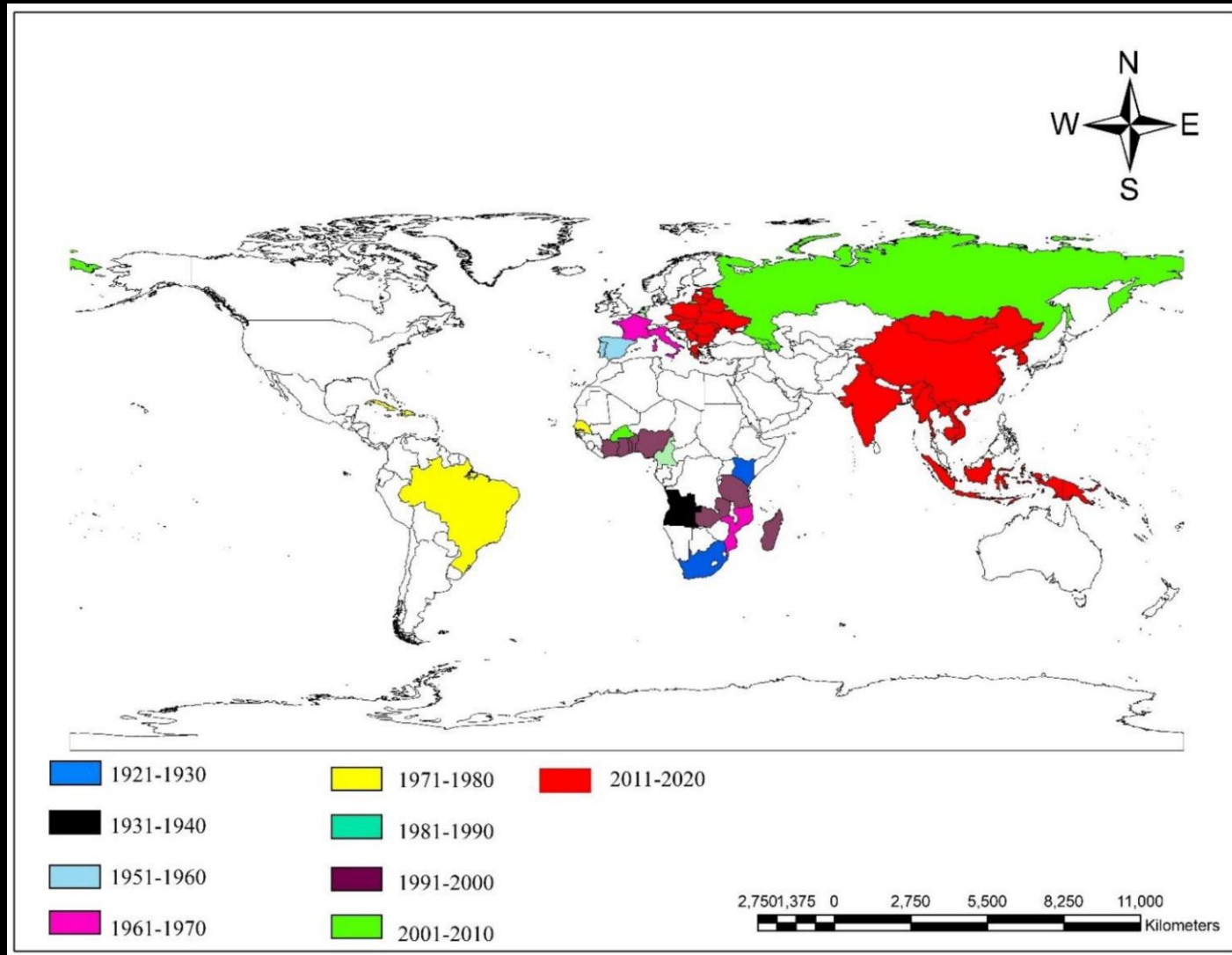
Lumpy Skin Disease



Lumpy Skin Disease



African Swine Fever



Climate Change

Increased
transmission

Increased risk



Equine Infectious Anaemia

- Americas, Europe, India, China, Australia
- Biting flies, infected blood products
- Europe – Majority of cases recently



West Nile Virus

- Natural host – Birds
 - Dead end hosts – Horses and Humans
 - Vector - Mosquitoes
 - Effective vaccines
-
- 1999 – New York City
 - 2005 – USA and Canada



West Nile Virus



Eastern Equine Encephalitis

- Natural host – Birds
 - Dead end hosts – Horses and Humans
 - Vector - Mosquitoes
 - Effective vaccines
-
- Americas
 - Distribution increasing



Western Equine Encephalitis

- Natural host – Birds
 - Dead end hosts – Horses and Humans
 - Vector - Mosquitoes
 - Effective vaccines
-
- North and Central America
 - Argentina and Uruguay 2023



Japanese Encephalitis

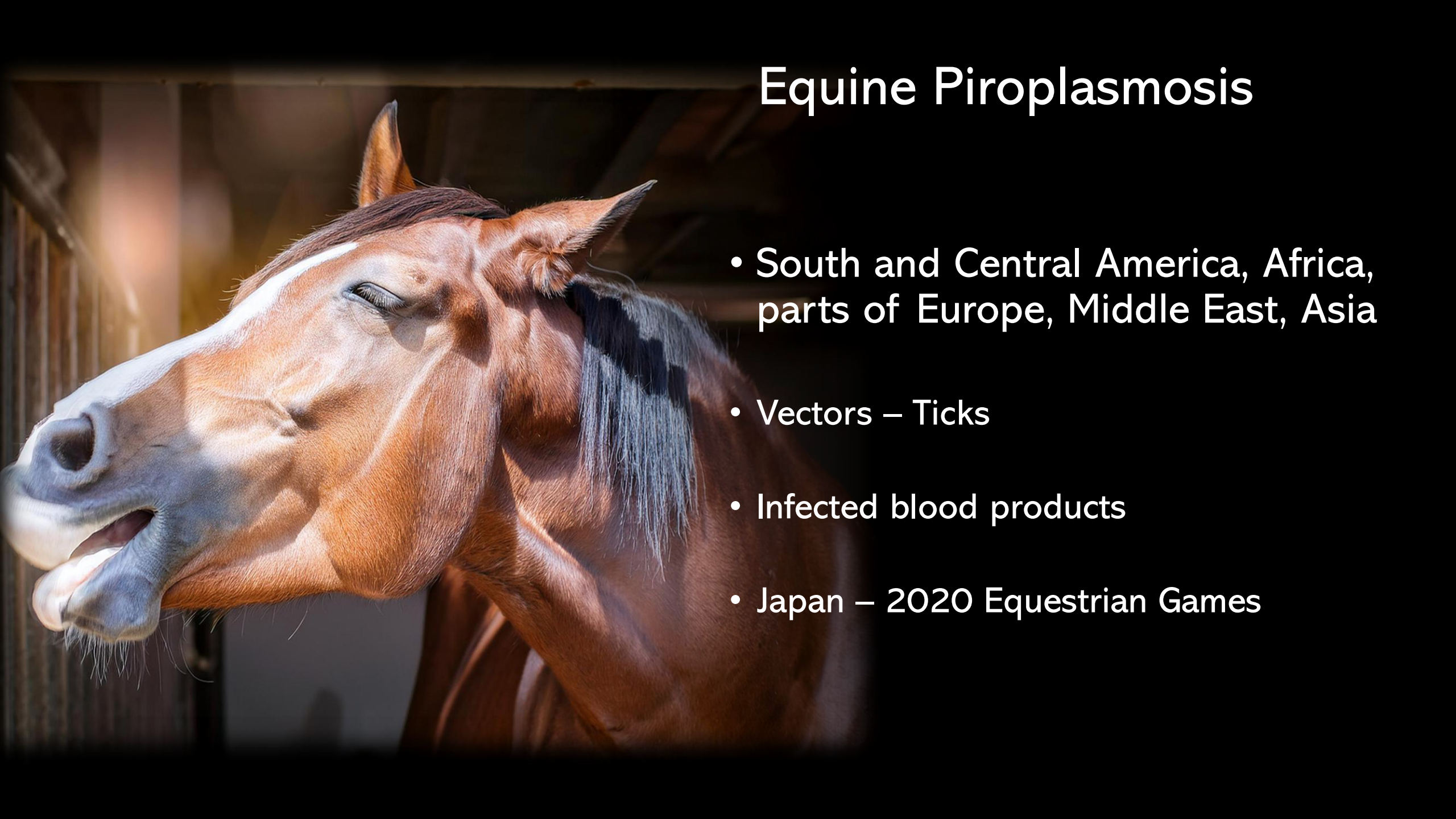
- Natural host – Pigs and Birds
 - Dead-end hosts – Horses and Humans
 - Vector - Mosquitoes
 - Effective vaccines
-
- Asia
 - Australia 2022 - Pigs



Venezuelan Equine Encephalitis

- Natural host – Rodents
 - Amplifying hosts – Horses and Humans
 - Vector - Mosquitoes
 - Effective vaccines
-
- Central America
 - Restrictions for horse movement





Equine Piroplasmosis

- South and Central America, Africa, parts of Europe, Middle East, Asia
- Vectors – Ticks
- Infected blood products
- Japan – 2020 Equestrian Games

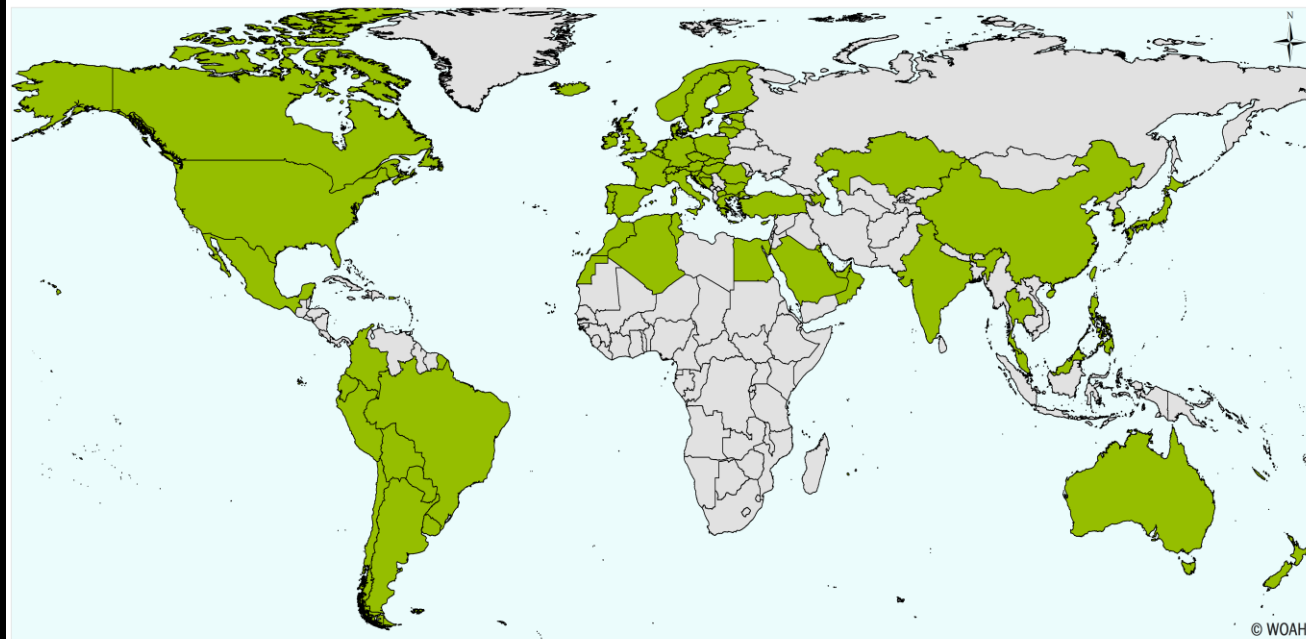
African horse sickness

- Sub-Saharan Africa
- Hosts – Horses, Donkeys, Zebra
- Vector – Culicoides midges
- Effective vaccines
- WOAAH official AHS status
- 1854-55 AHS Outbreak
 - 54% of horses in Cape Colonies died
- International spread
 - 1960 – Middle East – Cyprus to India
 - Europe – 1966 and 1987
 - Thailand – 2020 – 564 horses died



WOAH Members' official African horse sickness status map

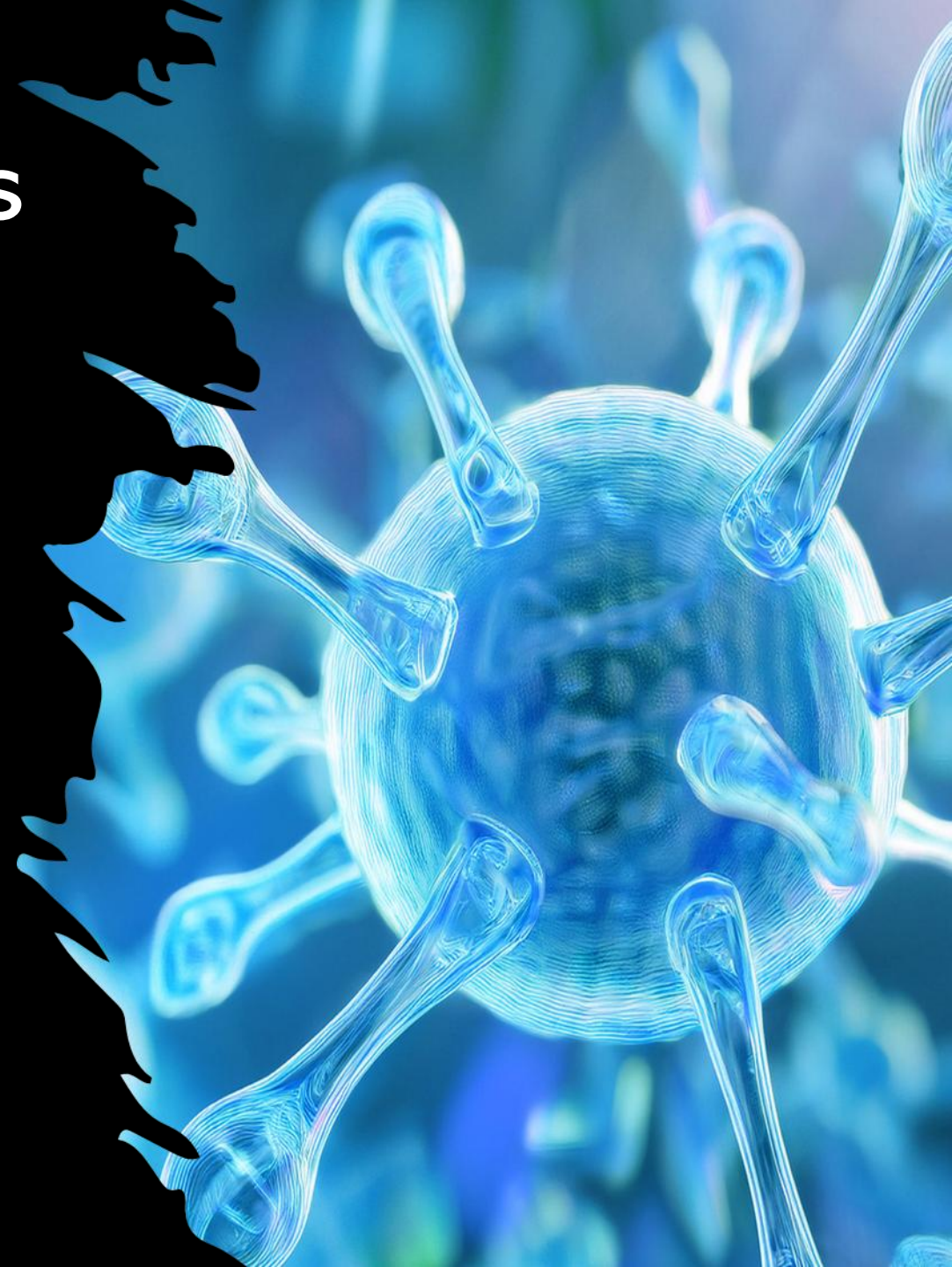
Last update June 2025



- Members recognised as free from AHS
- Countries without an official status for AHS

Equine Encephalosis Virus

- Sub-Saharan Africa
 - Hosts - Horses, donkeys, zebra
 - Subclinical to mild disease
 - Vector – Culicoides midges
-
- Outbreaks reported in Israel and India



Climate Change

Increased
geographic
distribution of
vectors



Expect the Unexpected!

Increased potential for
transmission

Increased risk of disease

Which disease where?

