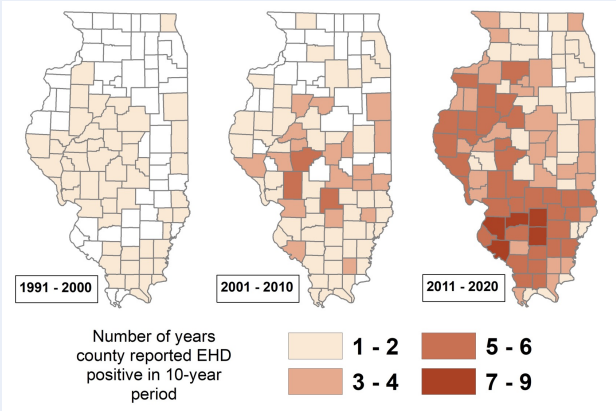


Where in the USA can EHD be found and who is affected?

- Deer die-offs noticed since the late 1880s were suspected to be due to EHD.
- Historically was found in southern, central, and western USA.
- Northward spread within the USA during the last 20 years could be due to climate change and the vector's home range expansion.
- Animal susceptibility varies; thus, not all ruminant species are affected equally.
- Some wild ruminants** suffer mild or no disease. However, white-tailed deer are particularly susceptible to the EHD virus, causing severe illness and high mortality rates.

Summary of Counties affected by EHD During the last 30 years.



Before 1990 → 16 counties with reported cases.
By 2020 → Only 4 of 102 counties have not reported cases.

For more information visit:
Illinois Department of Natural Resources
<https://deer.wildlifeillinois.org/>
Wildlife Veterinary Epidemiology Lab
<https://publish.illinois.edu/wildlifevetlab/>

Field dressing

- Wear gloves and wash hands and instruments thoroughly after field dressing.



Healthy



Sick

(Internal bleeding)

How can you help?

- Report sick animals or deer that appear to have died from EHD (please refer to the EHD signs explained before). Visit <https://deer.wildlifeillinois.org/deer-ecology/diseases/>
- Call your local IDNR District Wildlife Biologist office or the Springfield Wildlife Office at 217-782-6302.

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Brochure design: Drs. Nelda A. Rivera and Nohra E. Mateus-Pinilla.
Cover Photo courtesy of Michael Jeffords and Susan Post - INHS



Visit our lab website



Epizootic hemorrhagic disease (EHD) in Illinois



Wildlife Veterinary
Epidemiology Laboratory
Illinois Natural History Survey
Prairie Research Institute

What is EHD?

Epizootic hemorrhagic disease (EHD) is a vector-borne viral disease that only affects deer and other ruminants and is transmitted by insect vectors of the genus *Culicoides*.

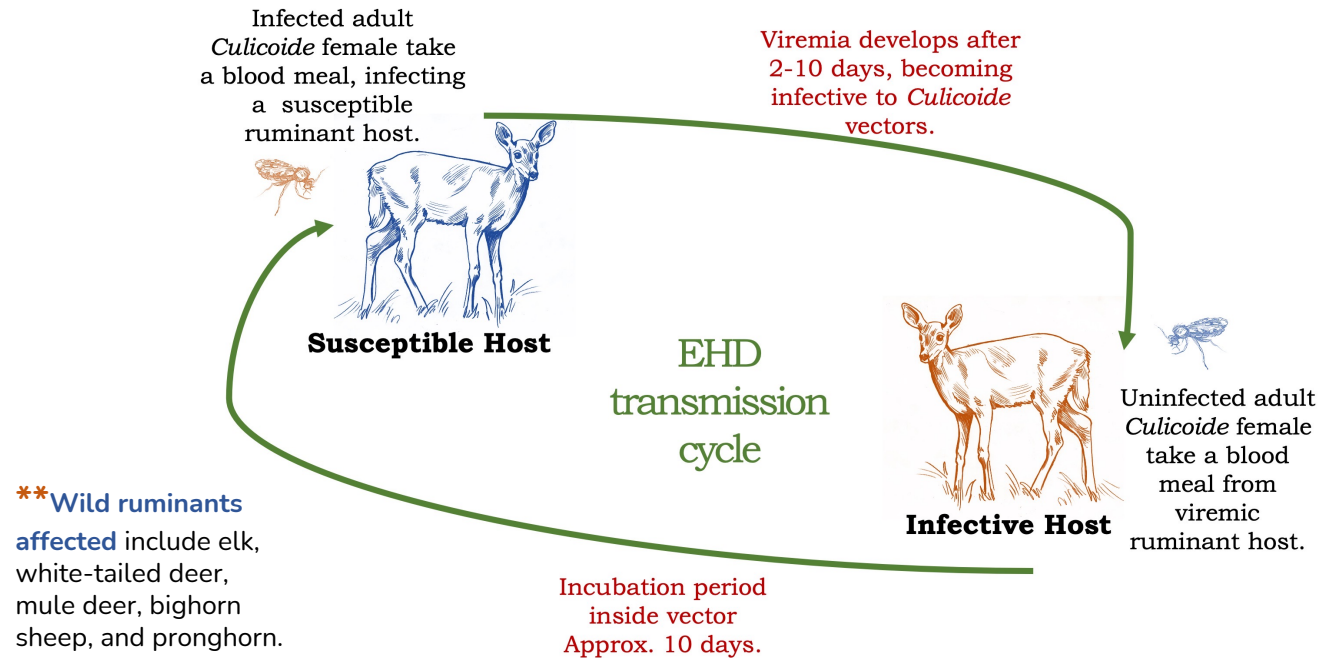


A mosquito (right) and biting midges (left) take a blood meal from a human.

The causative agent of EHD is a double-stranded RNA virus **transmitted** by **biting flies** (aka biting midges, no-see-ums, pinyon gnats, punkies, and five-O's in the US, and moose flies in Alaska and Canada).

Pictures: Mosquito and midges by Dunpharlain; Sick deer by Alex M. Lourash; EHD Illinois maps by William M. Brown; EHD life cycle adapted from Rivera et al., 2021. Bluetongue and Epizootic Hemorrhagic Disease in the United States of America at the Wildlife-Livestock Interface. *Pathogens* 10(8):915

How do animals get infected?



What are the signs of disease?

Clinical (external):

- Edema (swollen head, neck, tongue, or eyelids), fever, and disorientation.
- Excessive salivation, labored breathing, lack of appetite, and weakness.
- Potential hoof abnormalities (e.g., sloughing/cracking of hoof walls).
- Due to high fever and dehydration, multiple EHD deer are often found together near open water. In some cases, several dead animals are located near or in open waters.

- Mouth and tongue may look bluish.
- Cases of sudden death have been reported.

Internal:

- Enlarged lymph nodes, liver, and spleen.
- Extensive bleeding throughout organs (most likely in the heart, kidney, lungs, and intestinal tract) due to damage to endothelium/lining of blood vessels.
- Ulcers and necrotic lesions may occur on the lips, tongue, and cheeks.

When are animals more susceptible?

In Illinois, EHD is seasonal. Therefore, outbreaks occur during late summer and fall (mid-July to November), immediately after the peak occurrence and activity of the biting midges.