



MELISSA MCGAW/NCWRC

# HEMORRHAGIC DISEASE



## About the Disease

Hemorrhagic disease occurs in deer populations every year during late summer and early fall in the Southeast U.S. The disease is often referred to as “blue-tongue,” however the responsible virus can only be identified in a laboratory, and epizootic hemorrhagic disease (EHD) viruses are typically responsible for hemorrhagic disease outbreaks in North Carolina rather than blue-tongue (BT) viruses. Hemorrhagic disease viruses are transmitted to deer by biting flies and cannot be transferred from one deer to another. Clinical signs of hemorrhagic disease are highly variable; infected deer may appear normal or show only mild signs of the illness (see **Signs of Hemorrhagic Disease**). Acute infections can kill a deer in 1 to 3 days. Deer that survive acute infections develop immunity, but can experience long-term side effects such as lameness, suppressed appetite, or loss of energy.



## Signs of Hemorrhagic Disease

- Swollen or bluish head, neck, tongue, or eyelids
- Breathing difficulty
- Loss of appetite or energy
- Erosions or ulcers on the tongue or mouth
- Peeling or splitting of hooves
- Scarring, hemorrhaging, or fluid build-up in internal organs

## The Vector

Hemorrhagic disease is transmitted by biting flies known as biting midges, sand gnats, sand flies, no-see-ums, or punkies. Outbreaks of the disease typically occur seasonally during hot, dry weather when biting midges become numerous. Generally, the onset of winter and freezing temperatures decreases biting midge populations and brings an end to hemorrhagic disease outbreaks.



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Common signs of Hemorrhagic Disease. Left image: bluish discoloration of the tongue. Right image: ulcers on the dental pad.





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## Suspicious Deer

Hemorrhagic disease should be suspected in instances of unexplained deer mortality during late summer or early fall, especially if any of the above signs are present or if a dead deer is found near water. Sick or dead deer should be reported immediately to your local District Biologist ([ncwildlife.org/Portals/0/Hunting/Documents/WMDistrict-BiologistContacts.pdf](http://ncwildlife.org/Portals/0/Hunting/Documents/WMDistrict-BiologistContacts.pdf)) or the Wildlife Helpline at 866-318-2401. Delays in reporting hinder the ability to determine the cause of death or illness.

## Herd Impacts

Deer herds in the Southeast U.S. have some immunities to hemorrhagic disease and disease events aren't notable in most areas in most years. However, severe localized outbreaks periodically occur and result in significant losses in deer numbers. Typically, hunting effort is voluntarily reduced by deer hunters during and immediately following outbreaks, and deer herds recover within a few years.

## Human Health

Hemorrhagic disease does not affect humans, and people are not at risk by handling or eating venison from an infected deer or being bitten by an infected biting midge. Deer that develop secondary bacterial infections or abscesses may not be suitable for consumption. It is difficult to determine the extent of secondary infections or distinguish hemorrhagic disease from other diseases. As a precaution, humans should not eat meat from animals that appear to be sick or die from unknown causes.

## Livestock Health

The effects on domestic livestock are difficult to assess. In cattle, BT infections are usually subclinical (no obvious signs); however, a small percentage of animals can develop fever, lameness, sore mouths, and reproductive problems. There is less known about EHD in cattle, but antibodies found in some herds indicate that they may frequently be exposed to the virus. Domestic sheep are typically unaffected by EHD, but BT can be serious, causing effects similar to those in deer.



JASON ALLEN

Still have questions about hemorrhagic disease?  
Please visit our website, [ncwildlife.org](http://ncwildlife.org), or email  
[wildlife.health@ncwildlife.org](mailto:wildlife.health@ncwildlife.org)



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