

## **You Ain't from Around Here! Invasive of the Quarter: Rabbit Hemorrhagic Disease Virus 2 (RHDV2)**

**By: Jennifer Gagnon, Virginia Tech**

As a Virginia woodland owner, you are probably quite familiar with the eastern cottontail (*Sylvilagus floridanus*). Every morning as I drive to work I pass a few (and sometimes follow one as it jumps ahead of me along the road). You may not be as familiar with other rabbits that may be found or have historically occurred in restricted areas of Virginia, such as the Appalachian cottontail (*Sylvilagus obscurus*), marsh rabbit (*Sylvilagus palustris*), Mearn's eastern cottontail (*Sylvilagus floridanus mearnsii*), Smith's Island cottontail (*Sylvilagus floridanus hitchensi*) or the nonnative black-tailed jackrabbit (*Lepus californicus*), which is actually a hare. In addition to being charming additions to the landscape (when they aren't eating our garden vegetables), rabbits are important indicators of healthy ecosystems. They help disperse the seeds of native plants and are an important food source for a variety of predators, including hawks, owls, foxes, bobcats, and coyotes. They are also economically valuable. Small game hunters, including rabbit hunters and falconers, contributed \$2.6 billion to the US economy in 2011. And rabbits are the third most common house pet in the US.

Unfortunately, a highly contagious strain of rabbit hemorrhagic disease (RHD), spread by a nonnative virus (rabbit hemorrhagic disease virus 2 [RHDV2]), currently is spreading through parts of the US. A previous strain of RHD (RHDV1) was present in Europe since the late 1970s and had spread to over 40 countries. Although RHDV1 only affected young European rabbits (*Oryctolagus cuniculus*), it resulted in dramatic declines in wild rabbit populations throughout Europe and Asia. The newer RHDV2 strain was first identified in France in 2010 and quickly spread throughout Europe. Unlike its predecessor, RHDV2 infects many species of rabbits, as well as hares. It also appears to affect both young and adults.

Here in the US, RHDV2 was first detected in domesticated rabbits in Ohio (2018), Washington State (2019), and New York (2020). It was first detected in wild rabbits in the Four Corners Region (CO, UT, AZ, NM) of the southwestern US in 2020. Since then,

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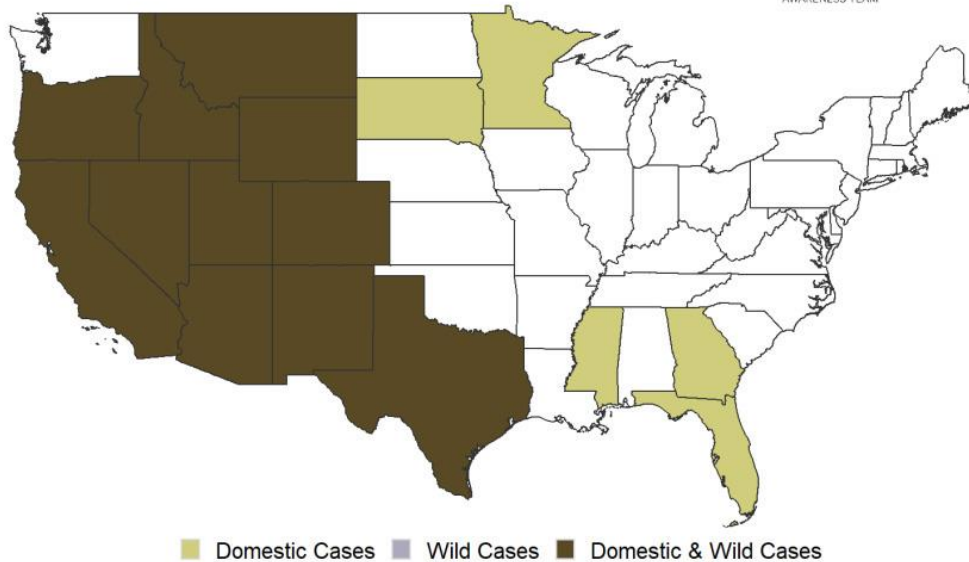
***A young eastern cottontail rabbit.***

***Photo by: Jen Goellnitz.***

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confirmed cases of RHDV2 have spread rapidly from the initial area of outbreak, affecting both wild and domestic populations. As of this writing, it has been confirmed in 16 states (see map); however it is not known to be present in Virginia. Cases of RHDV2 that have arisen farther to the north and east have been attributed to the exposure and subsequent movement of infected domestic and/or commercial rabbits, especially those that have been caged in close proximity to other rabbits (such as would occur at competitions and shows). This movement likely occurred before any diagnostic symptoms of disease were evident.

## RHDV2 November 2021



See [RHDV2.org/resources](https://RHDV2.org/resources) for data disclaimer.  
Domestic cases include both domestic and feral rabbit cases.  
Map Credit: Dr. Michel Kohl, RHD Awareness Team, University of Georgia.  
Data last updated November 03 2021

RHD progresses rapidly and damages the liver of infected animals. RHD is fatal in up to 80% of infected animals. It is likely that all rabbit and hare species in the US are susceptible. Infected animals who survive RHD can continue to shed the virus for at least 42 days.

The progression of RHDV2 is so fast that it is rare to observe clinical signs, especially in wild rabbits. Often, sudden death is the first sign of a problem. Where observed, clinical symptoms may include:

- Bleeding from the nose, other orifices, or internally within various body cavities
- Lethargy and depression
- Lack of coordination
- Blue-tinged lips
- Fever
- Decreased appetite

However, finding dead rabbits and hares with no obvious signs of trauma will be the most likely indication of infection.

RHDV2 spreads through direct contact between rabbits and hares and indirectly through contact with meat, fur, blood, urine, feces, and materials an infected animal has touched, such as bedding, cages, clothing, and shoes. The virus may last a long time on contaminated materials. As is the case with many nonnative species, people are the greatest vectors contributing to the spread of this disease as infected animals and contaminated materials are moved to new areas.

What can be done to protect rabbits and hares from RHDV2?

1. If you find a sick or dead rabbit or hare that has blood around its nose or mouth or does not show any obvious signs of death, please mark the location and report it. Do not touch or move dead animals.
  - a. Report domesticated animals to the Virginia State Veterinarian at 804-692-0614 or [vastatevet@vdacs.virginia.gov](mailto:vastatevet@vdacs.virginia.gov).
  - b. Report wild animals to your local Virginia Department of Wildlife Resources (DWR) District Biologist: <https://dwr.virginia.gov/wp-content/uploads/media/dmap-map.pdf> or call the Wildlife Conflict Helpline at 855-571-9003.
2. Leave wild rabbits where you find them. Remember, it is illegal in Virginia to have any wild animal in possession or to relocate one to property you do not own without a permit from DWR to do so.
3. Do not move or transport rabbits long distances.
4. If you live in or near an area with confirmed RHDV2 cases (none in Virginia at the time of this writing) and are taking an injured rabbit to a wildlife rehabilitation center or veterinarian, contact the business before arrival to discuss their RHDV2 precautions.
5. Do not transport live or dead rabbits into or out of RHDV2 positive areas.

If you have pet or show rabbits, additional precautions may be warranted — consult your veterinarian for further guidance.

There is no cure for animals infected with RHDV2; however, there is a vaccine under emergency authorization in the US. The developer of the vaccine, Medgene Labs, is working with state veterinarians to meet individual state requirements for distribution and reporting of the vaccine. Because of the rapidly expanding availability, check with your state's agriculture agency to determine the status of this vaccine's availability in your state. Of course, vaccination is not a viable solution for protecting wild rabbits and hares at this time.

Although RHDV2 certainly is worrisome, there are other diseases that also can lead to death in rabbits, some that also display few to no clinical signs. Therefore, if you observe dead rabbits and hares, please contact the appropriate agencies noted above so they can accurately determine a cause of death.

Addition information is available from:

- RHD Awareness Team: <https://rhdv2.org/>
- The Center for Food Security and Public Health: [https://www.cfsph.iastate.edu/Factsheets/pdfs/rabbit\\_hemorrhagic\\_disease.pdf](https://www.cfsph.iastate.edu/Factsheets/pdfs/rabbit_hemorrhagic_disease.pdf)
- USDA Animal and Plant Health Inspection Service: [fs-rhdv2.pdf](https://www.aphis.usda.gov/fs-rhdv2.pdf) (usda.gov).
- Virginia Department of Wildlife resources:
  - Rabbit Hemorrhagic Disease: [content/uploads/media/RBDV2.pdf](https://www.dwr.virginia.gov/wp-content/uploads/media/RBDV2.pdf)
  - Rabbit Hemorrhagic Disease Virus Serotype 2: [https://dwr.virginia.gov/wp-content/uploads/media/RHDV2-Shows-and-Fairs.pdf](https://www.dwr.virginia.gov/wp-content/uploads/media/RHDV2-Shows-and-Fairs.pdf)

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