



SCWDS BRIEFS

A Quarterly Newsletter
Southeastern Cooperative Wildlife Disease Study
College of Veterinary Medicine
The University of Georgia
Athens, Georgia 30602

Fall 2025 — Volume 43 — Number 3

Eds. M. Ruder and B. Kurimo-Beechuk

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White-tailed deer, L. Jorge



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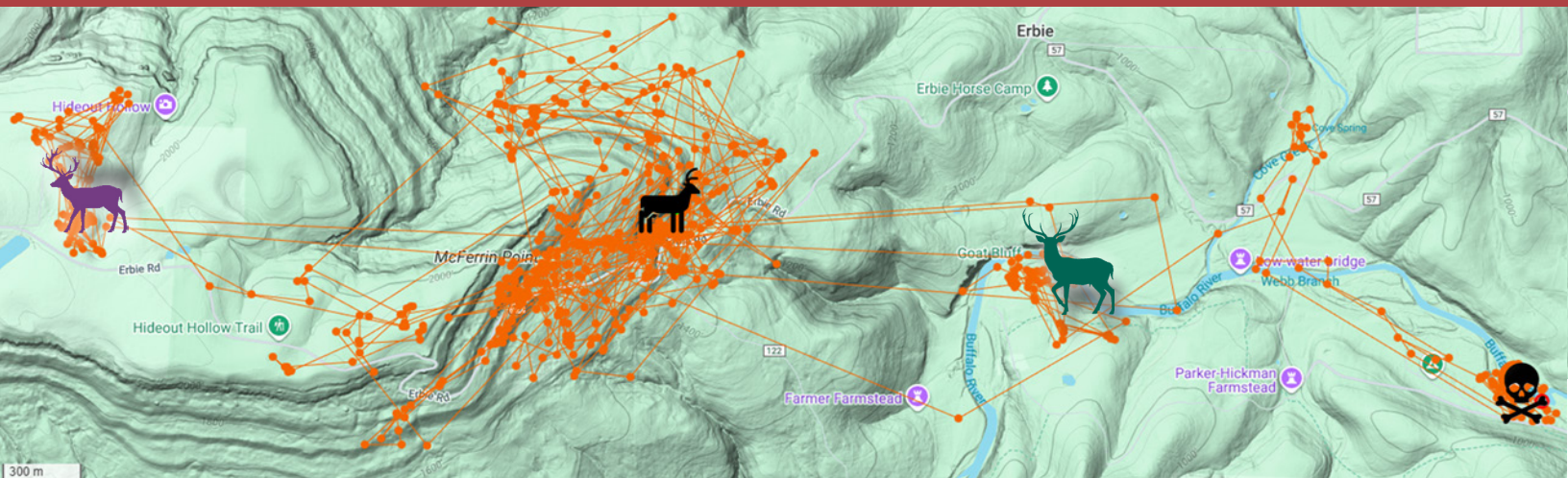
Deer 341 as a 1.7-year-old in good body condition at the time of capture, L. Jorge

Cervid research highlight

In the **Fall 2024 issue** of the **SCWDS BRIEFS**, we brought you the story of deer 275; a 3.5-year-old, female, white-tailed deer that died from CWD in Newton County, Arkansas. This doe was captured and GPS-collared as a yearling and was monitored as part of a 5-year, collaborative research project to investigate the impact of CWD on white-tailed deer in northwest Arkansas. Here, we chronicle the life and death of another deer from the same study – deer 341.

Early on the cool morning of March 17, 2022, the field team trapped a young deer in a clover trap. The deer was quickly restrained in the trap and sedated so the team could collect samples, record morphometric measurements, and affix a GPS collar to monitor his movement. Deer 341 was released near the **Erbie Campground**. This remote and beautiful portion of Arkansas is where CWD is thought to have persisted on the landscape for the longest, making deer 341 an important study subject. At the time of capture, the yearling buck was in good body condition (3 on a 1-5 scale) and weighed approximately 120 lbs, *as seen above*. A rectoanal mucosa-associated lymphoid tissue (RAMALT) biopsy collected at capture was tested for CWD by collaborators at **Colorado State University's Prion Research Center**. The sample was positive by both immunohistochemistry (IHC) and real-time quaking induced conversion (RT-QuIC) assay. Knowing the CWD status of captured deer provided the research team the opportunity to investigate the impact of CWD on individual deer movement.

The story of deer 341



A map of deer 341's GPS track during the study. Deer 341 was originally captured in his core range, near McFerrin Point and Erbie Road (black deer). After capture, he began travelling east towards Buffalo National River, but reversed course and headed to private properties near Hideout Hollow (purple deer). After staying here, he began moving east near Goat Bluff (teal deer), but was ultimately found dead at the Erbie Campground (skull and crossbones). Map, M. Jorge

Over the coming weeks to months, deer 341 moved across the mountain within 1 km of where he was originally captured in his core range (black deer icon on the [map above](#)). On July 26, 2022, he began an excursion moving eastward down the mountain towards Buffalo National River, but this was short-lived as he reversed course and moved westward beyond his core range and onto flat land where he would reside in and around fields located on private properties (purple deer icon). He stayed near Hideout Hollow until August 14, 2022, when he once again made the 4 km trek down the mountain past his core range, arriving near Goat Bluff (teal deer icon). He stayed near Goat Bluff until August 27, 2022, at which point he returned to his core range; however, he soon began moving further east past Goat Bluff, crossing the river moving north along Cover Creek. From Cover Creek, he doubled back and continued southeast down the Buffalo National River arriving at the Erbie Campground on September 2, 2022, just a few days before his eventual demise. During this entire period, he never ventured farther than 3.3 km from his core range.

On September 18, 2022, just six months after capture, the field team received a mortality signal from deer 341's GPS collar. Now 2.3-years-old, the young buck lay dead along the edge of the Buffalo National River. The day before, a member of the public camping nearby reported seeing this buck standing at the river's edge and it did not flee when approached. The death scene and carcass were undisturbed, as if the buck collapsed and died without a struggle, [visible in the image on the next page](#). Although there was an old infected wound on his left rear distal limb which was likely a previous penetrating injury, there was no evidence of acute trauma or predation. The carcass was in poor nutritional condition, with severe muscle wasting, no visible fat stores, and red gelatinous bone marrow ([observed during field necropsy; image on page 5](#)). This was a far cry from his body condition at the time of capture just six months earlier.

Coupled with the CWD-positive result of the RAMALT biopsy from capture, this mortality was shaping up to be a case of end-stage CWD. Internally, the right cranial (or front) lung lobe was dark red and consolidated. This finding is consistent with aspiration pneumonia, which is commonly observed



On September 18, 2022, the field team received a mortality signal from deer 341's GPS collar. The young buck was found dead on the banks of the Buffalo National River. When researchers arrived, the carcass was undisturbed and it appeared that he died without a struggle. Photo, L. Jorge

in the later stages of CWD when protective swallowing reflexes are lost, resulting in aspiration of forage, as [apparent in the image on page 6](#). Suspicions of end-stage CWD were confirmed when retropharyngeal lymph node, palatine tonsil, and obex samples all tested positive by IHC. Bacterial culture of the chronic distal limb injury yielded growth of *Trueperella pyogenes* and *Fusobacterium necrophorum* – both common causes of bacterial infection in white-tailed deer. While the field signs such as autumn mortality near water were suggestive of hemorrhagic disease (HD), there were no postmortem findings consistent with HD and tests for epizootic hemorrhagic disease virus and bluetongue virus were negative.

Deer 341's cause of death was determined to be CWD, which was the most common infectious disease encountered in adult deer over this entire study and was the third most common cause of death behind predation and harvest. However, this deer also had two comorbidities that impacted his overall health. As stated before, aspiration pneumonia is commonly observed in deer with CWD and is consistent with the diagnosis of end-stage CWD. Distal limb traumatic injuries (e.g., small penetrating injuries) that are further exacerbated by bacterial infection are commonly diagnosed in white-tailed deer. Such an injury likely impacted this buck's mobility and would have put him at greater risk for

The story of deer 341

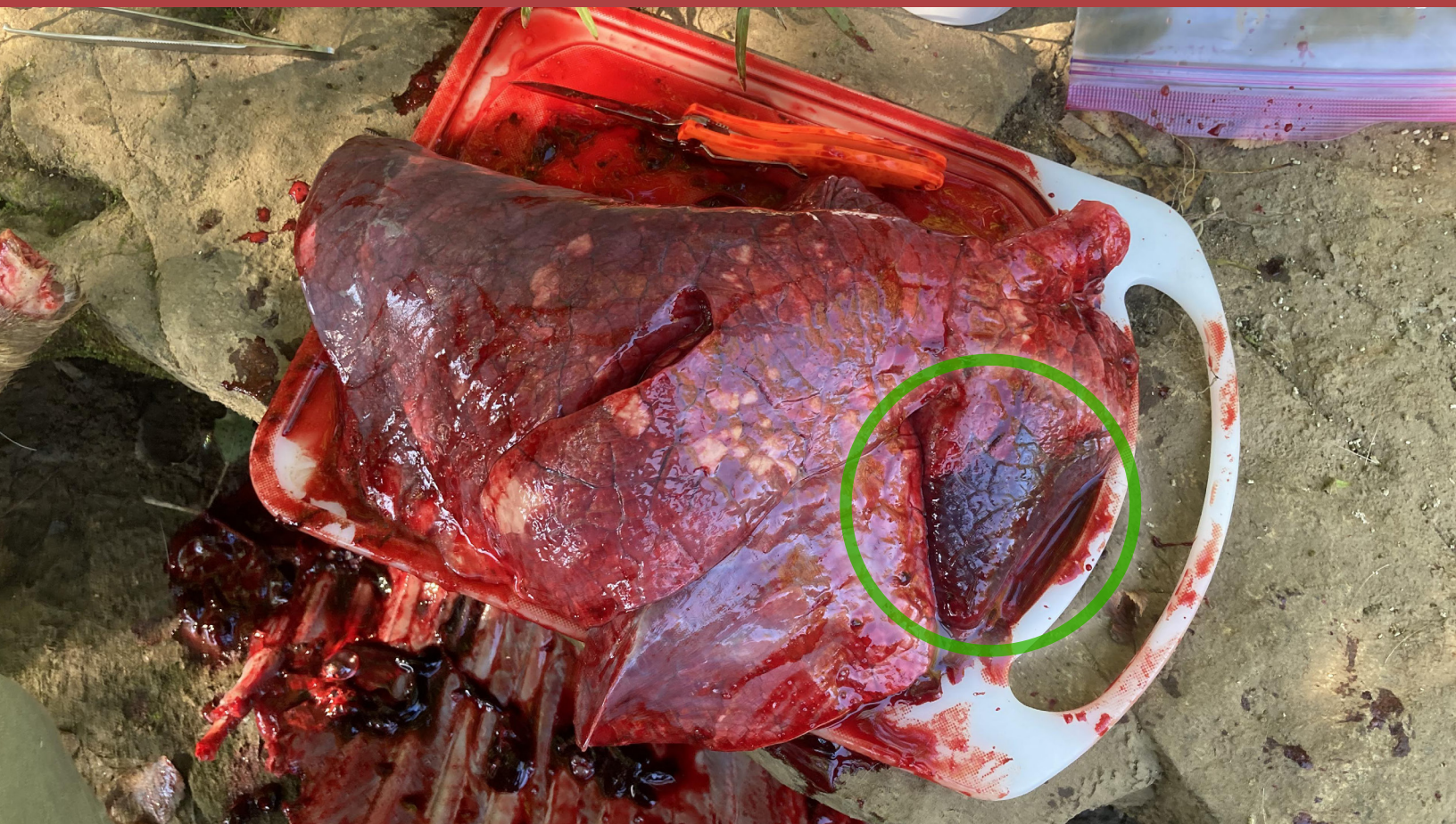


Deer 341's carcass at the time of field necropsy, which was conducted on site. Although there was an old infected wound on his left rear distal limb which was likely a previous penetrating injury, there was no evidence of acute trauma or predation. The carcass was in poor nutritional condition, with severe muscle wasting, no visible fat stores, and red gelatinous bone marrow. Photo, L. Jorge

predation (along with clinical CWD). Whether luck or intent, this buck somehow evaded predation, but CWD caught up with him. This is an unfortunate fate of many deer in this localized area of Arkansas. This buck died just short of the third breeding season of his young life, which would have been his first as an adult. His death reiterates that fact that although CWD is a slow-progressing disease, deer infected early in life can have greatly reduced lifespans. This five-year (2021-2025) collaborative research project has concluded, but final analysis and publication of findings are in progress and with such a rich dataset, we hope to answer additional CWD questions in the future. Here, we are telling stories of the life and death of individual deer in the research project in an effort to communicate the many ways that deer with CWD can die. We feel this is a worthy exercise because this topic is nuanced and can be a point of confusion for the public.

It is often stated that CWD is always fatal. This is certainly true, but it is important to recognize there are numerous ways a deer with CWD may die. We must keep in mind the prolonged timescale of CWD. The incubation period (i.e., time from infection to development of clinical signs) of CWD is longer than most diseases in deer – typically greater than 18 months. Therefore, it may be a year or more before obvious clinical signs develop, but once a deer begins to show visible evidence of clinical CWD, the animal progressively deteriorates until death occurs (typically within months) – which occurred

The story of deer 341



The right cranial (or front) lung lobe was dark red and consolidated (area within the green circle). This finding is consistent with aspiration pneumonia, which is commonly observed in the later stages of CWD when protective swallowing reflexes are lost, resulting in aspiration of ingested food items. Photo, L. Jorge

with deer 341. However, during this phase of progressive deterioration, many CWD-positive deer get into other trouble (e.g., predation, harvest, vehicle strike, bacterial disease). Previous research has shown that CWD-positive deer may be more susceptible to some of these other causes of mortality (i.e., vehicle strike, predation, harvest). Regardless of whether a deer dies directly from CWD, or CWD predisposes them to death from another primary cause, the animal's lifespan has been shortened. Once a deer has CWD, the clock starts ticking and it will be dead within a couple of years.

We will bring you additional stories in future issues of the **SCWDS BRIEFS**. This project, led by **University of Georgia's Warnell School of Forestry and Natural Resources**, is a large collaboration between **SCWDS**, **Arkansas Game and Fish Commission**, **Colorado State University**, **National Park Service**, and the **US Forest Service** with funding contributions by the **CWD Alliance**, **Cabela Family Foundation**, **Boone and Crockett Club**, **Rocky Mountain Elk Foundation**, and the **US Fish & Wildlife Service Wildlife Restoration Program**.

Prepared by Mark Ruder, Lisa Jorge (Warnell School), and Marcelo Jorge (Warnell School)

New World screwworm updates

Since the update in the **Spring 2025 issue** of the **SCWDS BRIEFS**, there have been some important developments in the New World screwworm (NWS) outbreak situation.



Recent cases in northern Mexico

On September 21, 2025, NWS infestation was **reported** in an 8-month-old cow in Sabinas Hidalgo in the state of Nuevo León. This is the northernmost detection of NWS during this outbreak and is less than 70 miles from the US-Mexico Border. The affected animal had recently been moved from a region in southern Mexico with known active NWS cases. The two isolated NWS cases in cattle in Nuevo León were categorized as “inactive” in October after the animals received antiparasitic treatment and completed 21-day quarantines. Sterile flies were also dispersed across this area and dispersal is planned through December 2025. No additional NWS cases or non-sterile flies have been identified through intensive surveillance and trapping in Nuevo León or any other border State. On November 11, a NWS case was detected in Guerrero State (502 miles from the US border); sterile flies were dispersed locally following this detection. As of November 21, 2025, the **active case** closest to the US was in central Veracruz State, around 425 miles from the border. At the time of this publication, US ports remain closed to imports of cattle, bison, and horses from Mexico.



NWS surveillance efforts

Since July, **USDA** has been actively monitoring counties along the southern border in Texas, Arizona, New Mexico, and California with approximately 120 monitored **NWS-specific fly traps** and over 7,000 fruit fly “double duty” traps. To date, over 30,000 US-trapped flies have confirmed to not be NWS. Meanwhile, **APHIS Wildlife Services** teams have examined at least 6,642 wild animals across 28 species in 120 US counties, finding all to be free of NWS infestation. USDA is also increasing stray animal inspections at the US-Mexico border by **USDA Tick Riders**, and luggage inspections at airports by the **Beagle Brigade**.

SCWDS has been in communication with the **National Veterinary Services Laboratories (NVSL)** regarding submissions of suspected NWS larvae. State agency personnel may send larvae collected from wildlife to NVSL directly or member agency staff can send them to SCWDS for initial morphologic review, which will be followed by NVSL confirmation if the submission is suspected to be NWS. NVSL confirmation is required to initiate the federal response to NWS.



Drug approvals for NWS treatment/prevention

On **September 30, 2025**, the **US Food and Drug Administration (FDA)** conditionally approved **Dectomas-CA1 (doramectin injection)** injectable solution for use only in cattle to prevent and treat NWS larval infestations. The drug is approved for the prevention of NWS re-infestation for 21 days. The **FDA** has issued an **Emergency Use Authorization for Credelio® (lotilaner)**, to treat NWS infestations in domestic dogs, and another **Emergency Use Authorization for Credelio CAT (lotilaner chewable tablets)** to treat NWS infestations in domestic cats.



New facilities planned for sterile insect dispersal and production

On November 13, **APHIS announced** the opening of a new sterile insect dispersal center in

New World screwworm updates

Tampico (Tamaulipas State), allowing for aerial dispersal over the detection sites in Nuevo León and replacing the use of ground release chambers in that location. A fruit fly facility in Metapa, Mexico is being renovated to produce sterile NWS flies to supplement ongoing production at the **COPEG** facility in Panama. Two new facilities are planned at **Moore Air Force Base** in McAllen, Texas. The first is a \$8.5 million facility for fly dispersal, which is expected to be operational in early 2026. This facility will obtain pupae from other facilities and hatch them for later release. The second is a new facility for fly irradiation. USDA-APHIS plans to invest up to \$750 million and the facility is expected to produce 300 million sterile flies/week. An estimated completion date for this facility has not been announced.



Reported human cases in the US

On August 4, 2025 the **CDC** announced a confirmed human case of NWS in a traveler who recently returned to Maryland from El Salvador. Additional trapping activity in a 20-mile radius of the affected area did not yield any NWS flies. Other traveler-associated cases of NWS have occurred in the US in past years and all were found to be isolated and not posing a threat to other people or animals.



Additional USDA resources

USDA-APHIS continues to promote its **5-pronged plan for combatting NWS**:

- Stop the Pest from Spreading in Mexico
- Protect the US Border at All Costs
- Maximize Our Readiness
- Take the Fight to the Screwworm
- Innovate Our Way to Continued Success

On October 17, 2025, USDA-APHIS released a draft of its **New World Screwworm Response Playbook**, which “outlines key approaches, resources, and tools to implement animal health response activities in the event of a US detection of NWS.”

On November 21, 2025, USDA launched a **new NWS website** to centralize NWS information available across the federal government. The site will host targeted resources for livestock producers, veterinarians, animal health officials, wildlife professionals, healthcare providers, pet owners, researchers, drug manufacturers, and the public, along with the latest information on cases and response activities in Mexico and preparedness efforts in the US.

Prepared by Ellen Haynes



Feral pigs, T. Fisher

Trypanosoma cruzi antibodies detected in feral pigs

Invasive wild pigs continue to wreak havoc across the US, causing an estimated \$1.5 billion in annual damage through their destructive rooting and wallowing behaviors. Pigs are also hosts to numerous parasites and pathogens, many of which are zoonotic. Recently, SCWDS researchers, in partnership with the **USDA National Feral Swine Damage Management Program**, tested over 1,000 wild pigs from a dozen states and found that nearly 15% have antibodies to *Trypanosoma cruzi*, the parasite that causes Chagas disease in humans, dogs, and some wildlife and exotic species. This work has recently been **published** in the **Journal of Wildlife Diseases**.

Chagas disease, sometimes called “the kissing bug disease,” is transmitted by blood-sucking triatomine insects that typically bite people and animals while they sleep, or when animals ingest infected bugs. In humans and dogs, the disease can cause serious heart and digestive problems years after infection, and while it’s often associated with Latin America, health officials increasingly recognize it as a health threat in the southern US. The parasite naturally circulates among wildlife like raccoons, opossums, and wood rats, which serve as reservoirs. SCWDS has a long history of working on this parasite – studies include wildlife surveillance, molecular characterization, experimental trials, vector studies, pathology, diagnostic development, and includes the recent detection of the **first clinical case in a wild black bear**. Our current study results indicate that wild pigs—which are spreading rapidly across the country—might also be acquiring and potentially spreading this parasite.

The USDA National Feral Swine Damage Management Program routinely removes wild pigs and collects blood samples to monitor for pathogens that could threaten commercial livestock, such as pseudorabies and swine brucellosis. We saw an opportunity in these collections to test for the presence of *T. cruzi* antibodies, which would indicate past exposure to the parasite. We analyzed



Feral pig, T. Fisher

1,093 serum samples from wild pigs across 12 states spanning southern, midwestern, and western regions—all areas where the parasite-carrying triatomine bugs are found.

Our results revealed that wild pigs are encountering *T. cruzi* throughout their range, though prevalence varied significantly by state. Overall, we found nearly 15% of pigs tested positive for antibodies to *T. cruzi*, indicating exposure to this parasite is relatively common. Interestingly, factors like pig sex, age, or the sampling season did not affect prevalence, indicating that exposure risk may be associated with spatial distribution of pig populations versus other demographic variables.

While this study confirms wild pigs are being bitten by infected kissing bugs, or ingesting infected triatomines through consumption behaviors, it is still unknown if these animals can effectively transmit the parasite to vectors or other animals, including humans, because we did not directly test for parasites in the blood in this study. However, our findings add wild pigs to the growing list of species involved in the ecology of *T. cruzi* in the US. As wild pig populations continue to expand—often helped by people who illegally release them for hunting—they may be creating new opportunities for this parasite to spread into areas where it hasn't been detected before. Understanding the role these invasive animals play in pathogen transmission will be crucial for protecting both animal and human health across the country.

Prepared by Christopher Cleveland, Taylor Fisher, and Michael Yabsley



Diagnostic Case Highlight

Chronic EHD and bacterial pneumonia in a white-tailed deer

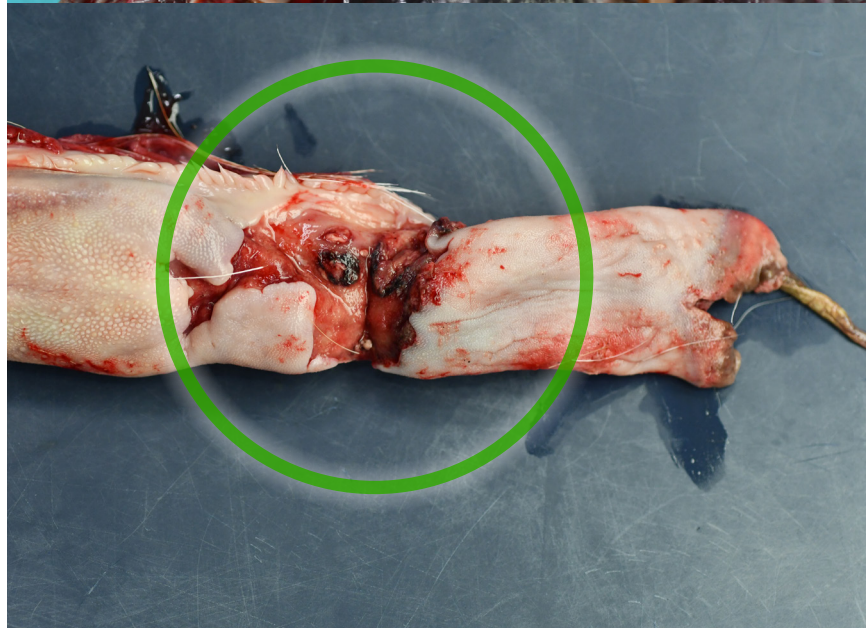
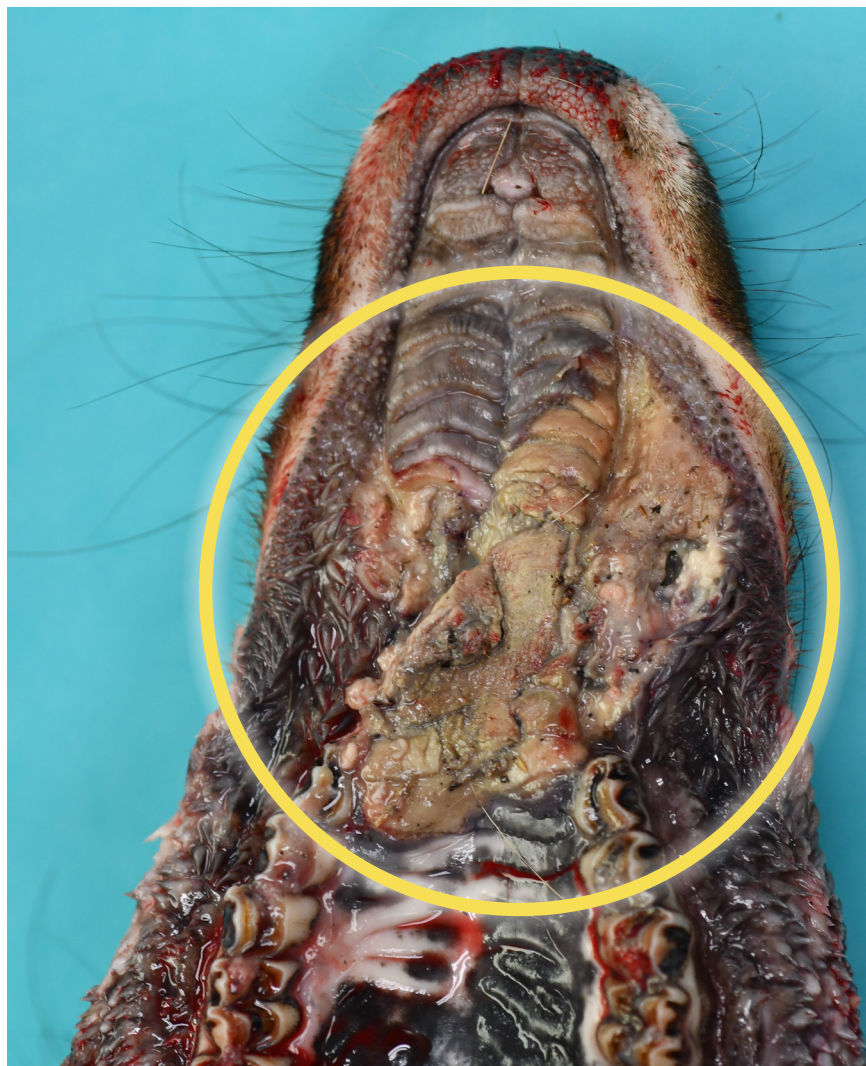
Hemorrhagic disease of deer can be caused by either EHDV or BTV and is one of the most significant infectious diseases of white-tailed deer. In some parts of the country, large-scale outbreaks can be explosive and result in high mortality, as was observed in parts of the eastern US this year. However, for an individual deer there is significant variability in infection outcome, ranging from subclinical infection to rapid death.



The carcass of a 4.5-year-old, female, white-tailed deer from Newton County, Georgia was submitted by the **Georgia Department of Natural Resources (GA DNR)** for a postmortem exam. On September 18, 2025, a private citizen observed the sick deer near the end of a residential driveway, close to a road. Later, GA DNR personnel found the deer with labored breathing near a house and thus, humanely dispatched it. The carcass was transported to SCWDS for diagnostic evaluation.

Evaluation revealed that the deer was in extremely poor nutritional condition, with severe muscle wasting and minimal to no subcutaneous or internal fat stores. There were bilateral, dried, open sores present on all of the hock and knee joints, highlighted by the **red arrowheads in the image above**. In the oral cavity, the hard palate contained a large ulcer with friable and necrotic (dead) tissue that extended to the left upper lip, visible in the **top image of the next page**. The middle portion of the tongue where the apex (free portion) meets the body had a deep ulcer and was partially sloughed, as seen in the **bottom image of the next page**. Multiple

Chronic HD & bacterial pneumonia in a white-tailed deer



From top to bottom: Hard palate of a deer with a large necrotic and infected ulcer which is visible by the difference in texture and light tan color within the yellow circle; tongue with a deep ulcer and necrosis present which is appreciable within the green circle. Photos, SCWDS

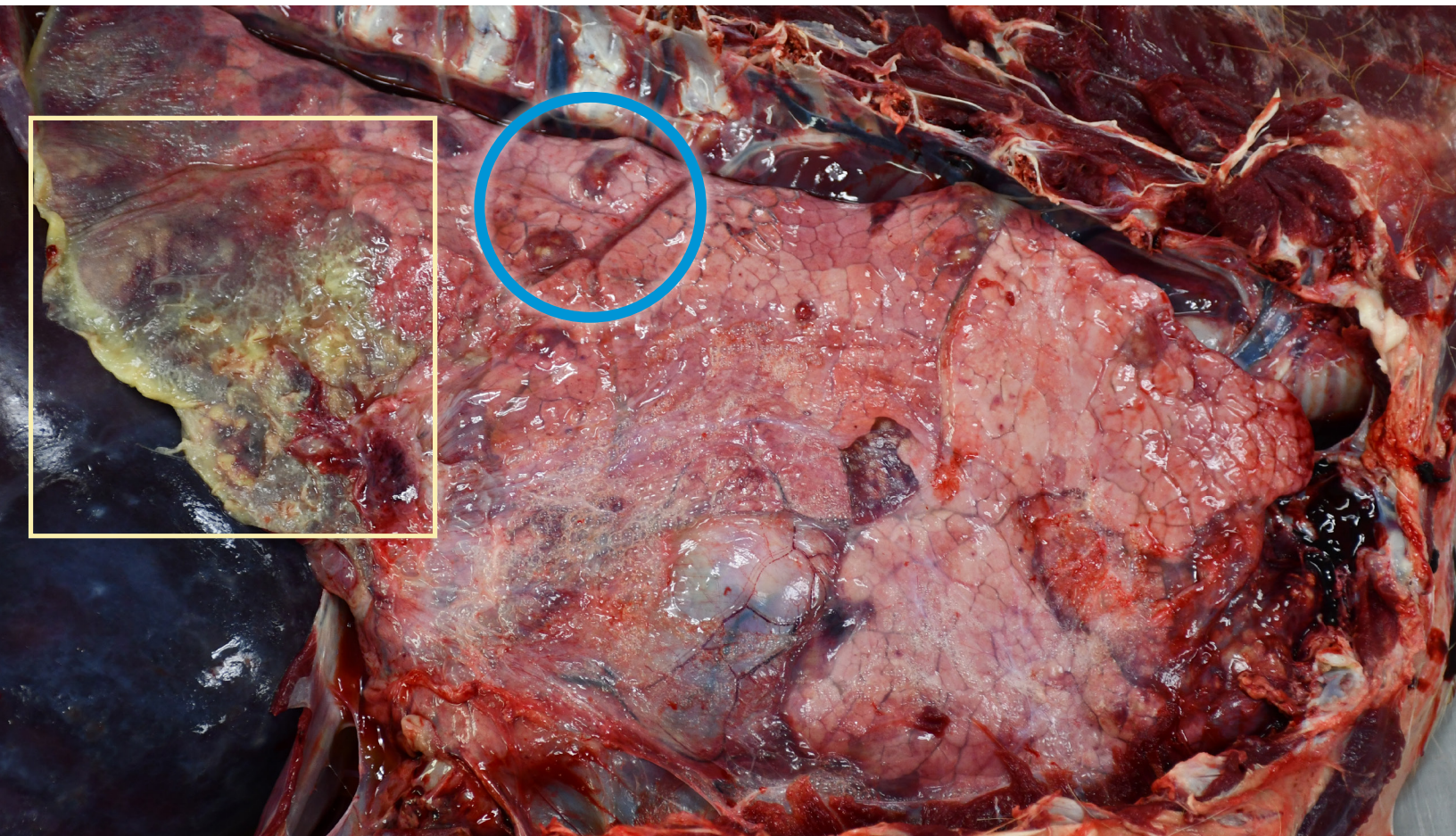
lung lobes contained firm, and often raised, areas of variable size (1 to 5 cm diameter). The cut surfaces of these lesions contained soft to firm pus, indicating chronicity but active disease, as seen in the image on the next page. Areas between lung units or lobules (i.e., interlobular septae) were occasionally expanded (fluid and inflammatory debris) and yellow-tan friable material covered and adhered the right caudal lung lobe to the adjacent inner chest lining. At least 80% of the papillae in the rumen, where microbial digestion of ingested forage occurs, were severely blunted. Aerobic culture on both oral cavity and lung lesions yielded heavy growth of *Trueperella pyogenes* and *Pasteurella multocida*, and lesions consistent with severe bacterial bronchopneumonia were observed on histopathology. Epizootic hemorrhagic disease virus (EHDV) serotype 6 was detected by RT-PCR in a pooled sample of lung and spleen. Bluetongue virus (BTV) was not detected. The prion that causes chronic wasting disease was not detected in the retropharyngeal lymph nodes by ELISA test.

The field signs and postmortem findings in this doe were consistent with the subacute to chronic form of hemorrhagic disease (HD), which was complicated by oral cavity ulcerations that were infected by opportunistic bacteria (*T. pyogenes* and *P. multocida*). Further, small fragments of bacteria-laden necrotic tissue and debris were likely inhaled to cause severe damage that facilitated additional bacterial colonization by *T. pyogenes* and *P. multocida*, resulting in labored breathing and other respiratory difficulties. All three of these diseases (chronic HD, bacterial pneumonia, and infected ulcers in the oral cavity) are individually significant, and each can lead to diminished nutritional condition. In this

Chronic HD & bacterial pneumonia in a white-tailed deer

case, we suspect that EHDV-6 infection was the original and inciting cause or contributor to subsequent alimentary and respiratory tract disease.

In severe HD cases, these viruses can damage microscopic blood vessels, resulting in fluid loss, hemorrhage, and tissue damage. For some deer, this may result in a severe, hemorrhagic fever and death within a few days (peracute form) or a week or two (acute form). Other deer may survive this hemorrhagic fever to develop the chronic form of the disease (as was observed in this case). Although deer with chronic HD have survived the acute phase (hemorrhagic fever) of the disease, they are left to deal with consequences of significant tissue damage incurred earlier in the infection. The blunting/scarring of the rumen papillae, deep ulcer of the tongue, infected oral cavity ulcer, and open sores on knees and hocks we observed in this deer are all classic lesions associated with chronic HD. The



Right lung showing multiple raised, firm nodules which consist of purulent to caseous material within the blue circle, and yellow friable material known as fibrin on the lung surface, within the yellow square. Photo, SCWDS

rumen of a deer functions as a large fermentation vat to convert forage into useable resources, thus the severe damage to the rumen lining in this deer left her incapable of digesting forage. However, the prominent tongue ulcer and severe bacterial infection in the oral cavity also interfered with the animal's ability to ingest forage. Thus, this animal was limited in its ability to not only intake food, but also in its ability to digest the forage it did consume. This likely led to a rapid decline in condition.

Erosions and ulcers within the oral cavity are common during acute HD. Those deer that survive to the chronic phase of the disease often are challenged when opportunistic bacteria infect these ulcers, as is suspected in this case. Based on the pattern of bacterial pneumonia observed, we suspect the

Chronic HD & bacterial pneumonia in a white-tailed deer



Rumen lining with massive (>80%) destruction of rumen papillae, which are visible as smooth, blunted areas (within yellow circle) and healthy papillae which still retain their characteristic 'shag carpet' appearance (within blue circle). Photo, SCWDS

infection in the mouth led to inhalation of bacteria that resulted in pneumonia. The bacteria involved in this case (*T. pyogenes* and *P. multocida*) are common bacterial infections in deer. Finally, the open sores on the knee and hock joints were likely related to weakness and the deer not wanting to bear weight on painful hooves. Virus-induced damage to small blood vessels in the hooves during the acute phase of HD can result in severe pain. This often results in lameness to the point deer may not want to bear weight on their hooves and instead walk on other parts of their limbs, creating open sores. The constellation of necropsy findings in this animal were dramatic and explain the poor nutritional condition that would have ultimately led to death.

Wildlife managers are routinely faced with calls about skinny or emaciated deer and often concerns about CWD rise to the top of this list. This is for good reason, as deer with end-stage CWD are often emaciated. However, there are many potential causes of negative energy balance and a severe loss of body condition in white-tailed deer. There are several common diseases in deer that cause problems with prehension (bringing food into mouth; e.g., trauma, infection), chewing (e.g., tooth root abscess, facial abscess, tongue ulcers), swallowing (e.g., throat/facial abscess), digestion (breaking food down into absorbable molecules; e.g., chronic/subacute HD), or absorption of these molecules into the bloodstream for use by the body (e.g., diarrheal diseases). Field necropsy examinations and targeted diagnostics of emaciated deer are critical to distinguishing the many potential causes of emaciation. After a prominent HD season during 2025, cases of chronic HD may be more common this fall and winter. We are grateful to Don McGowan with GA DNR for submitting this interesting case.

Prepared by Juliet Woodward, Tori Andreasen, Nicole Nemeth, and Mark Ruder

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Parting views from the Southeast



Brown-headed nuthatch, J. Woodward