

FROM THE PRESIDENT

Animal Health



William A. Demmer
PRESIDENT
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I want to focus this column on wildlife health for this fall issue, but before I wade into that subject, I want to describe five wonderful days spent this past July in Missoula, Montana.

My wife Linda, who is an effective huntress, and I attended the Boone and Crockett Club's class that teaches and then certifies our Club's Official Measurers. The class was led by the dean of Official Measurers, Jack Reneau, and his heir apparent, Justin Spring. Jack and Justin led the class with dedication and inspiration. The 17 attendees learned much more than how to qualify and rate trophy animals around the principals of mass and symmetry; they learned about the history of Boone and Crockett, and they learned about the men who changed the future for wildlife and its habitat. They learned about the role that the Boone and Crockett Club played in founding this social movement called conservation. To catch the enthusiasm generated by Jack and Justin, please visit the blog created by one of the passionate attendees at bear-hunting.com/2014/7/becoming-a-scorer-boone-and-crockett-club. Jack and Justin have just launched a new cohort of Boone and Crockett evangelists into the conservation world.

Now to the subject of wildlife health. Wildlife disease continues to grow and is an issue of not only regional consideration but of national concern. Wildlife disease is evolving into one of the more important issues of our time. Diseases are now changing how the public views wildlife and the problems they cause, including economic. Dr. William Porter, Boone and Crockett chair at Michigan State University, states that "wildlife disease is a 'frontier' issue that calls for pioneering leadership."

The recent Farm Bill reauthorization included new research support for wildlife diseases, as these diseases are affecting domestic wildlife. Bovine tuberculosis and brucellosis are two common diseases that occur in wildlife, and the livestock industry works hard to eradicate those diseases in

domestic herds. We know from years of debate over bison and from practice in the Great Lakes states, that a common policy for controlling these diseases is slaughtering wildlife. We as conservationists must ensure that our goals and recommendations are strongly in play so that dramatic depopulations are not the method of choice by default.

One key to preventing the spread of wildlife disease is the close monitoring of all captive wildlife. While there is a long history of close inspection and regulation of domestic livestock, captive wildlife generally falls outside of those regulations. The captive wildlife

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industry is a more recent development. Further, the captive wildlife industry has worked hard to avoid close inspection, which has been one major way that Chronic Wasting Disease has unknowingly spread among captive herds and then to wild herds with devastating effect. Better policy will require changes in legal definitions and jurisdictions concerning captive wildlife in order to get the right and honest answers on health inspections and control. These are fundamentals that we long ago worked out for other aspects of conservation, and the North American Model must now adapt to address these new developments of wildlife disease.

Many wildlife diseases are referred to as zoonotic, those that can be transmitted to humans as well. Diseases such as Lyme disease, rabies and West Nile Virus are widely recognized by the public. There is mounting

concern that if humans begin to encounter the diseases such as these more frequently, the image of many wildlife species as charismatic and desirable may shift to being seen as unclean and unattractive. Consequently, zoonotic diseases could radically alter public support of wildlife conservation. The Boone and Crockett Club as a leader in conservation has an obligation to stay ahead of the curve on this issue.

Wildlife disease is a relatively new challenge in the conservation portfolio and is not as fully defined and organized as it must be. Many states lack a wildlife veterinarian;

few have the funds or staff personnel to monitor wildlife health, and what federal funds that have been available are diminishing. At the same time, diseases are spreading. White-nose syndrome, which kills very high percentages of bat populations, is moving to the western U.S., and rabies is expected to expand dramatically in the next few decades. Changes in climate mean the expansion of diseases such as Epizootic Hemorrhagic Disease (a disease that killed an estimated 70 percent of the deer herd in my Michigan hunting region two years ago) are expanding northward. When these diseases strike new populations, the mortality rates can surpass 90 percent. It is obvious that investing in the health of our wildlife populations is essential. We, the Boone and Crockett Club, have two critical leadership challenges. The first is taking a lead policy role in dealing with the changing dynamics of a future plagued by much greater occurrences of diseases among wildlife; and secondly, leading the conservation world in generating new ideas for wildlife disease funding. With additional funding and by expecting more from existing wildlife health programs, including more wildlife veterinarians, better monitoring programs and with stronger science, we have a chance to maintain and celebrate this glorious wildlife and habitat environment that we have worked so hard to create.

The two professional members who have contributed articles this month are John Fischer and Rebecca Humphries. Both articles are terrific and talk to policy issues that are evolving around wildlife health. ■

A handwritten signature in blue ink that reads "Wm A. Demmer".

Deer and Elk - Wildlife or Livestock?

By Rebecca A. Humphries

Two iconic species of North American wildlife, deer and elk, have come under increasing debate in the policy arena. Wildlife in the United States fall under the public trust doctrine and are managed by state wildlife agencies, or in special cases, federal agencies (migratory birds and threatened/endangered species). Over time, individual animals have come into captivity through both legal and illegal means. The individuals who held the animals began breeding programs that have grown over time into captive herds for personal and commercial use. Over the last 25 years, a captive cervid industry has been organized and has sought to grow in the United States and Canada. This industry has marketed itself as livestock operations and efforts to be recognized as agriculture have been successful at the federal level. Privately owned cervids are now classified as livestock in the United States. The U.S. Department of Agriculture has developed testing standards for herd health, herd health accreditation programs, and recognizes movement of cervids under anti-trust regulations.

As the industry has expanded, it has sought recognition and support as an agricultural operation at the state level. In many states, the captive cervid industry has sought political support to be moved out from under the authority of state wildlife agencies and moved under the authority of state agricultural agencies. The reason is simple; most state wildlife agencies see the commercial ownership of native wildlife species as inappropriate for a public resource and risky to native wildlife populations. The concern comes from risk of spread of disease, genetic crossbreeding of escaped animals, and animal identification for regulated hunting. The North American Model of Wildlife Conservation has been built on the premise of wildlife as a public trust—belonging to the public at large, not to individuals. In addition, the taking of animals within enclosures flies in the face of fair chase hunting and, in fact, is not defined as hunting in some states, despite many captive facilities advertising themselves as hunting preserves.

As the captive cervid industry has grown, so has the occurrence of disease. This is due to a number of factors including higher animal densities, increased movement of animals, and increased awareness and disease

surveillance efforts. Diseases that move between traditional livestock and wildlife, such as brucellosis and bovine tuberculosis, are difficult to manage; managing disease across a fence in the same species can be even more difficult. Chronic Wasting Disease (CWD) has been shown to have a close correlation between infected captive and wild herds. CWD is always fatal, is extremely persistent in the environment, and once introduced into a wild herd, is virtually impossible to eliminate.

As a result, state wildlife agencies have taken strong steps to try to reduce the risk of disease to their wild herds by limiting importation of captive animals, increasing regulations on captive cervid operations, or banning them completely. The private cervid industry, in turn, has sought a political remedy and sought regulation by the state agricultural departments in many states. Michigan, for instance, moved authority to agriculture, only to move it back to the Michigan Department of Natural Resources (MDNR) by executive order. Today the industry is regulated by the MDNR for facility registration and the Department of Agriculture and Rural Development for disease testing. In 2013, the captive cervid industry lost its political battle in Florida to overturn a state rule prohibiting captive cervid movement into that state. Most recently, a bill failed in the West Virginia legislature that would have moved authority for the regulation of captive cervids to agriculture. Similarly, a bill was passed to move authority for captive cervids from the Missouri Department of Conservation to the Department of Agriculture. That bill has since been vetoed by the governor. North Carolina is also facing similar proposed authority challenges.

Unfortunately, many of these battles over authority have become bitter with threats to public officials and conservation nonprofit organizations that support maintaining authority with the conservation agencies. Complicating this issue further is the recent relaxation of federal CWD herd accreditation regulations. The USDA has decided that CWD cannot be eliminated within the United States and thus has relaxed testing and movement standards for captive cervid facility owners seeking accreditation as “low risk for CWD.” ■



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Hemorrhagic Disease

By John R. Fischer

In 2012, large numbers of whitetail deer across the country died during an outbreak of hemorrhagic disease (HD), the most significant viral disease of whitetail deer. The 2012 event appears to have been as severe as the last big HD outbreak in 2007, when more than 53,000 dead deer were reported in the eastern and midwestern United States, and it may turn out to be the largest outbreak ever recorded.

Deer die-offs due to HD have been recognized at least since the late 1800s, but likely go back much earlier. When HD outbreaks during the 1950s threatened deer restoration, several southeastern states pooled their resources to establish the Southeastern Cooperative Deer Disease Study (now the Southeastern Cooperative Wildlife Disease Study [SCWDS]) at the University of Georgia's College of Veterinary Medicine. Researchers with SCWDS and other organizations developed much of what we know about HD. In addition to conducting research, SCWDS has monitored annual HD occurrence on a national basis since 1980, through a questionnaire that goes out to the wildlife management agencies for all U.S. states. This long-term database provides opportunities to observe changes in the epidemiology of HD, and such changes have been occurring over the last several years.

One of the big changes concerns the viruses that cause HD. Strains of two types of related viruses are involved: epizootic hemorrhagic disease virus (EHDV) and bluetongue virus (BTV). These viruses do not infect humans. Although EHDV primarily kills whitetail and mule deer, it may produce milder clinical disease in cattle; whereas BTV sometimes affects domestic sheep. HD has been observed in other wildlife species, including pronghorn, bighorn sheep, elk, and bison, but significant mortality typically is not encountered. Clinical disease from BTV and EHDV infection appears identical and deer occasionally are infected with both viruses simultaneously.

Prior to 2004, HD was caused by two strains of EHDV and five strains of BTV; however, several strains of EHDV and BTV not previously observed in the U.S. have been isolated from deer with HD since then, representing a new wrinkle in HD epidemiology.

The EHD-6 virus was first detected by SCWDS in 2006 and was isolated from

just a handful of deer with HD in subsequent years. But things were different in 2012: over 50 EHD-6 viruses were isolated from deer in 12 states, accounting for more than 25 percent of all HD virus isolations at SCWDS. This strain predominated in Michigan and Wisconsin, and was detected from the upper Midwest to the Gulf Coast. The EHD-6 virus appears to be here to stay and now is associated with HD mortality among deer across a broad geographic range. How the emergence of this virus strain may impact whitetail populations is unknown.

Another interesting change in HD epidemiology in recent years is the apparent northward expansion of the disease. The HD viruses are transmitted from deer to deer by biting midges of the genus *Culicoides*, and their role in HD epidemiology is readily apparent: outbreaks occur during late summer and early fall when midge activity peaks and subside with autumn frosts. In addition, the geographic range of HD in deer mirrors the distribution of the *Culicoides* midge, and warmer temperatures may be facilitating this range to the North. And the U.S. does not appear to be alone when it comes to changes in insect-borne disease ecology: In Europe, where BTV was regarded as an exotic virus prior to 1998, several years of warmer weather are believed to have facilitated expansion of *Culicoides* range and the dramatic spread of BTV-8 in domestic animals as far north as Scandinavia and the United Kingdom.

Locally, warm weather and drought appear to facilitate the spread of HD and may be a factor in the apparently increasing severity of outbreaks. Receding shorelines result in more muddy areas that the midges favor for reproduction, and higher temperatures may enhance the replication and transmissibility of virus in the insects. Deer are drawn to the limited water resources where large numbers of midges are carrying HD viruses, and the combination of these factors and others could contribute to the more severe and widespread HD outbreaks of recent years.

The detection of new virus strains and a broader geographic range are just two of the recent changes observed in HD epidemiology. There have been other more subtle changes, but the message is clear: The complex disease ecology of HD is changing and warrants continued attention in order to identify potential impacts on deer populations, as well as possible opportunities for management intervention. ■

ACRONYMS

SCWDS - Southeastern Cooperative Wildlife Disease Study

HD - Hemorrhagic Disease

EHDV - Epizootic Hemorrhagic Disease Virus

BTV - Bluetongue Virus

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