Conservation Corner

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Almost a year ago, January 25, 2018, in Issaquena County, Mississippi, a 4.5 year old male, white-tailed deer tested positive for chronic wasting disease (CWD). This is the first time an animal in Mississippi has tested positive for the disease, which is fatal to white-tailed deer.

The disease has since been found in Pontotoc and Marshall counties. This article, the first in a four-part series, will give you a closer look at CWD. It will touch on the various challenges posed by this disease and begin to update you about the status of CWD and what we know about it.

CWD is an infectious prion disease that occurs in at least five cervid species. Cervids are hoofed mammals in the deer family. The native North American cervid species in which CWD has been found are the white-tailed deer, mule deer, Rocky Mountain elk, moose, and caribou. CWD belongs to a group of diseases known as transmissible spongiform encephalopathies (TSEs). Mad cow disease, although distinctly different from CWD, is also a TSE. CWD causes a characteristic spongy degeneration of the brain resulting in loss of appetite, loss of weight, an insatiable thirst, abnormal behavior, loss of body functions, and death. Deer infected with CWD tend to stay away from herds, walk in patterns, carry their head low, salivate, and grind their teeth. Despite its likely occurrence in multiple locations since the 1960s or earlier, many wildlife and animal health professionals, as well as the public, perceive CWD as having emerged and spread rapidly only since the early 2000s. This perception has fostered the broader notion that the disease is a recent occurrence. To the contrary, given imperfect surveillance approaches, incomplete or inaccurate knowledge about local exposure risks, and the progression of an outbreak in its early stages, the first case detected in a locale is rarely the first case that has occurred.

CWD history remains incompletely documented; it was first recognized in captive mule deer held for research in Colorado in the 1960s. CWD has been reported in captive and/or free- ranging deer in 26 U.S. states, 3 Canadian provinces, South Korea, and Norway. Natural and human controlled factors have contributed to the geographic spread and persistence of CWD.

Natural factors include CWD prions' environmental persistence and the movement of wild deer.

Human factors include movement of infected live animals (and perhaps infectious tissues and other materials), concentration of normally dispersed wild deer, and other artificial management practices.

Many facets of CWD biology and ecology are now well understood, but effective management and control strategies remain incomplete. Eradicating CWD will not be easily done. Regardless, flexible and responsive approaches for containing it and reducing infection and transmission rates have shown some promise. Such pursuits undoubtedly will be more difficult to obtain support for, particularly when disease control measures will negatively impact or conflict with commercial hunting.

Moving forward, this wildlife disease merits great attention. Collective experiences and observations made over the last 5 decades can serve—for better or worse—as a solid foundation for wildlife and animal health professionals to build upon in addressing anticipated challenges posed by CWD in the decades to come.

In the next three columns, I will present an overview of what professionals regard as the key lessons learned over the first 5 or more decades of North America's experience with CWD.

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