Deer and elk farmers on the front lines of battle against chronic wasting disease

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The effort to manage a fatal brain disease in deer and elk is taking significant steps forward thanks to a partnership between researchers, government experts, and American deer and elk farmers.

Researchers from Midwestern University, Colorado State University, the Colorado State Department of Agriculture, and the United States Department of Agriculture were part of a unique study aimed at managing chronic wasting disease (CWD) in ranched elk in areas where the disease is common in wild deer and elk.

The project, first reported during the 59th AAVLD/USAHA annual meeting in Greensboro, NC, received a major boost from deer and elk farmers, including the North American Deer Farmers Association (NADeFA), the North American Elk Breeders Association (NAEBA), and Whitetails of Wisconsin (WOW). Over the past few years, the groups have supported research into developing live animal tests - specifically relying on samples collected during herd depopulations. What has been lacking, until recently, is the application of those test developments towards solving real world problems.

The project, headed by Midwestern University's Nicholas Haley, D.V.M., Ph.D., focused on using conventional and experimental tests for CWD to identify and remove infected animals from a large elk herd living on thousands of acres of fenced property. The study provided a substantial body of samples that could provide for more sensitive tests than are currently available, but perhaps more importantly it has allowed

insight into the genetic association between infection and disease resistance.

With the help of his collaborators, Dr. Haley been able to examine the links between infection and a number of genetic markers found in elk known as microsatellites, using techniques commonly known as "DNA fingerprinting" which assist in building a family tree for the ranch and may prove useful in any number of other species as well. "I am time and again fascinated with the wealth of genetic data we've been able to collect," Dr. Haley said. "Imagine being able to predict which animals may become infected next year, or identify branches of animals more resistant to disease than others, and ultimately using that information to manage the disease from purely an agricultural perspective."

The project would not be possible without the cooperation of deer and elk farmers and their representatives, Dr. Haley says. "This project has allowed the deer and elk farming industries to take ownership of CWD management and play a critical and prominent role in bringing it under control."

In areas where CWD is common, deer and elk farmers have the very realistic ability to manage their animals by identifying desirable traits and selectively breeding for them - in this case, resistance to CWD. "What would take Mother Nature thousands of years to do, deer and elk farmers can do in our lifetime," Dr. Haley suggests.

Although the concept of managing CWD on-site through live animal testing and selective breeding is a relatively new one in the deer and elk farming arena, Dr. Haley hopes that this project is able to demonstrate the strengths and weaknesses of such an approach, allowing future work to build off of the novel findings and ultimately stop CWD in its tracks.

Provided by Midwestern University