

In 2012, The Missouri Department of Conservation moved to rescind Antler Restrictions that were in place in 6 counties, which were the epicenter of an outbreak of CWD.

*“The Conservation Commission approved a regulation change in May 2012 for a special harvest provision that rescinds the antler-point restriction (four-point rule) in the CWD Containment Zone comprised of Adair, Chariton, Linn, Macon, Randolph and Sullivan counties. The repeal of the antler-point restriction will be effective September 15, 2012, the opening of archery season.*

*The reason for the regulation change is that management strategies, such as antler-point restrictions, protect yearling males and promote older bucks. Yearling and adult male deer have been found to exhibit CWD at much higher rates than yearling and adult females, so a reduction in the number of male deer can help limit the spread of CWD. The dispersal of yearling males from their natal or birth range in search of territory and mates is also one of the primary ways CWD spreads.” – MDC Website – Chronic wasting disease page*

### **Why did Missouri decide to do this?**

Yearling buck dispersal is the process where young male deer, leave their natal range and relocate to other areas prior to establishing their own adult home ranges. It's believed by many researchers that yearling dispersal plays a role in the spread of communicable disease.

*Between 50% to 80% of yearling males disperse distances of 10 to 30KM, depending on habitat characteristics, whereas less than 20% of females disperse. Infected yearling males are therefore more likely to spread CWD into new areas” Michael R. Hutchings - **Management of Disease in Wild Mammals***

While yearling bucks tend to have lower incidence of disease than mature bucks do, they are not immune. 21% of the antlered bucks that have tested positive for bTB in Michigan since 2002 have been yearlings.

*“Juvenile dispersal is likely an important mechanism for disease transmission among individuals and populations of mammals, especially in species such as white-tailed deer. White-tailed deer are known to be reservoirs for a number of ecologically and economically important diseases, such as bovine tuberculosis, Lyme disease, and chronic wasting disease. Further, dispersal likely plays an important role in inter-population transmission of these diseases. - Duane R. Diefenbach, et. al. **Modeling Distribution of Dispersal Distances in Male White-Tailed Deer***

Antler Point Restrictions have the practical impact of increasing the number of bucks that leave one area and relocate to other areas, which in turn increases the potential for

spreading disease from one area and relocating it to another area, thus exposing greater overall numbers of deer to disease. Focusing harvest pressure on yearling bucks results in a younger overall herd age structure and is an effective means of limiting the potentially negative impact that yearling dispersal may have on increasing the spread of communicable disease.

This strategy was noted in Michigan's revised CWD response plan, which includes several recommendations related to limiting yearling dispersal, as a means of risk reduction.

*"Support exists for targeting buck fawns and yearling bucks because of the risk of CWD spread from dispersal of yearling bucks in riparian habitats."*

*"Density reductions should target entire family groups (does and their fawns) to minimize the probability of disease persistence, and yearling bucks to minimize the probability of disease spread via dispersal."* – Michigan CWD response plan, adopted 2012

Other sources mention the strategy of targeting harvest pressure on yearling males, as a means of reducing dispersal rates.

*"Our genetic analyses suggest that males have potential to spread disease because of their extensive local dispersal (<100 km). More importantly, the genetic structure of males suggests that a substantial proportion of the population disperse >100 km, which in turn, implicates them as vehicles for long-distance transmission. "*

*"To limit spatial expansion of infectious disease outbreaks in cervids, males should be targeted for harvest and surveillance across a broad geographic range as they are readily capable of spreading disease across >100 km."* - Amy C. Kelly et. al. - **Utilizing disease surveillance to examine gene flow and dispersal in white-tailed deer**

*"Our results showed that most yearling males that dispersed followed the river corridor and established adult ranges within the river valley. This tendency may be strategically useful in controlling the spread of diseases from infected source populations. Management efforts in riparian habitats could be maximized by targeting male fawns and yearling males for removal in areas within or immediately adjacent to the river valley."* – Gregory M. Clements et. al **Movements of White-Tailed Deer in Riparian Habitat: Implications for Infectious Diseases**

A Wisconsin study made a similar recommendation for targeting yearling bucks as a means of disease risk mitigation;

*Although yearling males have low chronic wasting disease prevalence rates, they may be infected before dispersal due to variable incubation times. Managers should increase yearling male harvest and consider removing young males in areas of higher forest edge. – Lesa h. Skuldt et .al, **White-Tailed Deer Movements in a Chronic Wasting Disease Area in South-Central Wisconsin***

Clearly, regulations that have the potential to increase the number of yearling bucks dispersing by protecting increased numbers of yearling bucks, may be counter-productive to efforts intended to decrease the overall prevalence of communicable disease and limit its spread.