



QUALITY DEER MANAGEMENT ASSOCIATION

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Kip's Korner

Deer-Vehicle Collisions, December 2007

Some areas within the whitetail's range in the U.S. have low deer densities but many have abundant or overabundant herds. Overabundant herds cause hundreds of millions in damage each year to the forestry and agricultural industries and they damage homeowners' shrubs, flowers, ornamentals and vegetable gardens. While these damages are costly, they don't compare to the expense caused by deer-vehicle collisions (DVCs). According to Dr. Michael Conover, Director of the Berryman Institute at Utah State University, DVCs are responsible for an estimated 200 human fatalities, 29,000 injuries and over \$1.1 billion in property damage each year.

The Insurance Institute for Highway Safety estimates there are 1.5 million DVCs each year in the U.S. Given there are about 32 million whitetails in the U.S., this suggests one of every 21 deer will be involved in a DVC. These DVCs are a public safety concern and a waste of a natural resource, in addition to being a personal expense for motorists. DVCs occur most often at dawn and dusk and during spring (fawning) and autumn (breeding). Since the peak of the rut has just passed for many whitetail herds, this is a timely topic for hunters, managers and other whitetail enthusiasts.

Actual DVC data is difficult and time consuming to collect. Obtaining comparable data among states is even more difficult as some do not record this information while others rely on various state agencies or private contractors for their figures. Fortunately, State Farm Insurance Company compiles a state-by-state list of projected DVCs based on their insurance claim reports. This data may or may not be completely accurate for a given state, but it is the best data available to track annual DVCs within a state and compare DVCs among states. The following statistics are from State Farm.

My home state of Pennsylvania has led the nation four of the past five years in DVCs by averaging about 99,000 per year. Michigan led the nation once and has been second four of the past five years by averaging about 93,000 DVCs. Pennsylvania and Michigan more than double the average of the next top five states. At the other end of the spectrum, Hawaii averages less than 50 DVCs per year. In the continental U.S., the District of Columbia and Nevada average about 300 and 900 per year, respectively. The top 10 states for DVCs over the past five years are Pennsylvania, Michigan, New York, Ohio, Illinois, Virginia, Wisconsin, North Carolina, Georgia and Texas.

Many factors impact the number of DVCs. Growing human and deer densities, urbanization, development, proximity of forested areas to roadways, and number of vehicles, road miles, and miles traveled are a few. Texas and California lead the nation in public road miles and vehicle miles traveled but rank 10 and 19 in DVCs. While Pennsylvania and Michigan lead the nation in DVCs, they are ranked 8 and 9 in the number of road miles and miles traveled. Pennsylvania also leads the nation in the average number of DVCs per mile of road. Pennsylvania motorists hit one deer for every 1.22 miles of public road. Similarly, Maryland drivers hit one deer for every 1.23 miles of public road. Conversely, Hawaii motorists hit a deer for every 100 road miles, and Nevada motorists hit one for every 33 miles.

You can also analyze DVCs by the number of vehicles in a state. West Virginia leads this list with a DVC for every 57 vehicle registrations. West Virginia drivers are 5,000 times more likely to hit a deer than get struck by lightning during the next 12 months. Michigan (1 in 86), Wisconsin (1 in 99), Pennsylvania (1 in 100) and Iowa (1 in 109) round out the top five, and the national likelihood of hitting a deer is 1 in 216. My chances of hitting a deer were much lower at my former residences in Florida (1 in 1,273) and New Hampshire (1 in 390), although the odds of hitting an alligator or moose were much higher.

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and the preservation of the deer-hunting heritage.*

An additional way to analyze this data is to compare the number of DVCs to the legal harvest by hunters. Ideally, DVCs would be equivalent to a small percentage of the legal harvest. Looking at the top 10 DVC states in 2006-07 reveals that DVCs averaged 20% of the 2006 legal harvest in those states, meaning that motorists hit a deer for every five taken by hunters. Texas and Wisconsin lead the list with DVCs equivalent to only 9% of their legal harvests. New York is at the bottom of the top 10 with DVCs equivalent to 34% of its 2006 legal harvest. Ohio and Pennsylvania are close behind with DVCs equivalent to 27% of their 2006 harvests.

How can you reduce DVCs? Various techniques from “deer whistles” to wildlife warning reflectors to signs and fences have been tried. Deer whistles emit high frequency sounds that supposedly scare deer from roadways. Research on the hearing ability of deer reveals they don’t hear well in the high frequency range, and there is no data to support that deer whistles deter deer from entering roadways or reduce DVCs. Wildlife warning reflectors supposedly deter deer from entering roadways by using light from oncoming vehicles to provide an “optical warning fence” to deer. Dr. Gino D’Angelo and his colleagues at the University of Georgia found the reflectors were ineffective in preventing DVCs. They also noted that reflectors using red and blue lenses actually increased the likelihood of a DVC. Road signs are used by many states to alert drivers to the possibility of deer entering the roadway. Signs in new locations may work temporarily, but drivers quickly acclimate to them and their effectiveness declines. Fences can successfully keep deer and other wildlife off roadways but they can also block travel corridors and alter movement patterns. Fences are also expensive to erect and recent research by the U.S.D.A. Animal and Plant Health Inspection Service showed a minimum of 7- to 8-foot fences are necessary to keep the majority of deer from jumping over them. In their trials, 91% of deer jumped a 6-foot fence while only one deer jumped a 7-foot and no deer jumped an 8-foot fence.

In closing, let’s look at one final piece of DVC data. Of the top 10 DVC states, the average number of DVCs has increased over 9% from 2002-03 to 2006-07. North Carolina leads this list with a 31% increase. Only two of the top 10 states have fewer DVCs today than in 2002-03. New York has nearly 3% fewer, and Pennsylvania reduced the number of DVCs by nearly 12% from over 111,000 to just over 98,000. This reduction is over 20 percentage points above the average – kudos to the Keystone state! While this may still be a lot of DVCs, Pennsylvania implemented a progressive deer management program in 2002 and a large reduction in DVCs is just one of its many benefits. So, what’s the best technique for reducing DVCs? Balancing the deer herd with the available habitat.

For more information on DVCs and devices designed to minimize them visit www.forestry.uga.edu/h/research/wildlife/wildlife/devices. This University of Georgia website includes a comprehensive annotated bibliography on the Evaluation of Strategies Designed to Reduce Deer-Vehicle Collisions.

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