Effectiveness of Localized Deer Management in Reducing Deer-Vehicle Crash Rates in Iowa—Some New Evidence

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ABSTRACT

Using data on deer population from the Iowa Department of Natural Resources (Iowa DNR) as well as data on deer-related vehicle crashes from the Iowa Department of Transportation (Iowa DOT), this study investigates the effectiveness of localized deer management on the reduction of deer-vehicle crashes in three selected cities in Iowa over the period 2002–2007. Preliminary results, including trends (increasing or decreasing) in deer population and deer-vehicle crashes during the analysis period, were presented at the 2008 Mid-Continent Transportation Symposium. This paper presents some new findings based on additional data collection. In addition to the deer-vehicle crash data, carcass reports were collected and geo-coded. The deer carcass locations were assigned to the nearest milepost and the carcass data were converted into a form that would be compatible to use in geographic information systems software. The deer-vehicle crash database maintained by the Iowa DOT was compared to that of the carcass data to eliminate double counting of crashes. Visualization tools and statistical analysis were used to establish a relationship between the deer-vehicle crash rates and the annual deer population counts within each selected city. Concluding remarks and recommendations are offered regarding the effectiveness of the localized deer management in Iowa. In addition, this study illustrates the types of data necessary to document the effectiveness and demonstrates how analysis can be carried out and ultimately improved.

Key words: deer-vehicle crash—localized deer management