USING A GEOGRAPHICAL INFORMATION SYSTEM TO EVALUATE CONTRIBUTING FACTORS TO DEER-VEHICLE COLLISIONS

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Abstract: An expanding human population combined with a growing white-tailed deer (*Odocoileus virginianus*) population has resulted in an increase of deer-vehicle collisions in Arkansas. In response to this increase, we are using spatially explicit datasets integrated within a geographic information system (GIS) to identify county-level and site-specific factors contributing to deer-vehicle collisions. County-level information, such as human population densities/urbanization, deer density indices, and road densities, is being evaluated for use in identifying potential aggregations of deer-vehicle collisions. Site-specific information being evaluated includes physical factors such as landcover composition and arrangement, topography, and road characteristics. By incorporating these multi-scale data sets in a GIS, spatial intersections of variables indicating potential current or future "hotspots" of deer-vehicle collisions can be identified and mapped. This information can then be used to aid administrators and natural resource managers in identifying locations where deer-vehicle collisions may be concentrated.

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