

Analysis of Timber Transportation Accident Frequency, Location, and Contributing Factors in Georgia, USA 2006-2016

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Abstract

In the U.S. South, the overwhelming majority of timber is transported from forests to mills by tractor-trailers. Therefore, safe and efficient timber transportation is critical for wood supply chain efficiency. Vehicle accident reports (DOT-523) were collected from the Georgia Department of Transportation for all accidents involving logging vehicles and other heavy vehicles for the years 2006-2016. Accident location, frequency, contributing factors, and vehicle condition were analyzed for the periods 2006-2009, 2010-2012, and 2013-2016 for accidents occurring outside the Atlanta metro area. Logging vehicle accidents declined by nearly 70% 2006-2013, but increased by 14% 2014-2016. Accidents per million tonnes of timber hauled in the state declined from 9.2 in 2006-2009 to 3.6 in 2013-2016 ($p < 0.01$). The most common contributing factors to logging vehicle accidents were “following too close” in 2006-2009 and “misjudged clearance” in 2010-2012 and 2013-2016. Logging vehicles involved in accidents remain older and in worse mechanical condition compared to other heavy vehicles. Since 2010, more than half of all logging vehicle accidents occurred in urban areas. Fewer than 5% of accidents occurred on Interstate Highways, but 50% of accidents occurred within 8 km of an Interstate Highway 2013-2016. Overall, timber transportation safety improved between 2006 and 2016, but opportunities exist for further improvement. Reducing average age of logging vehicles; proactive maintenance; and investing in technology such as onboard cameras and GPS tracking may reduce logging vehicle accidents and improve timber transportation efficiency.

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