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SENT TO LSU AGCENTER/LOUISIANA FOREST PRODUCTS DEVELOPMENT CENTER - FOREST SECTOR / FOREST PRODUCTS INTEREST GROUP



Exports of woody pellets from the southeastern United States (US) for European power plants have expanded since 2009, leading to concerns about major negative environmental effects. To examine effects of this recent expansion of the pellet industry on forest conditions, we use US Department of Agriculture Forest Service (USFS) Forest Inventory and Analysis (FIA) annual survey data for 2002 to 2014 to analyze changes in timberland trends since 2009 for two fuelsheds supplying pellets to the ports of Chesapeake, Virginia, and Savannah, Georgia. This analysis reveals that the Chesapeake fuelshed had significant increases in acreage of large trees and harvestable carbon after 2009. Furthermore, the timberland volume within plantations increased in the Chesapeake fuelshed after 2009. The Savannah fuelshed had significant increases in volume, areas with large trees, and all carbon pools after 2008. Increases in carbon in live trees for the Chesapeake fuelshed and all carbon pools for the Savannah fuelshed for the years before and after 2009 provide empirical support to prior estimates that production of wood-based pellets in the southeast US can enhance greenhouse gas sequestration. Both fuelsheds retained more naturally regenerating stands than plantations; however the number of standing dead trees increased within naturally regenerating stands and declined within plantations (but only significantly for the Savannah fuelshed). While the decrease in the number of standing dead trees per hectare for the Savannah fuelshed plantations after 2009 warrants investigation into its effects on biodiversity, others have recommended thinning and hardwood mid-story control within pine plantations to provide habitat for regionally declining bird species, which is consistent with use of biomass for energy and reducing the risk of fire. While all energy use affects the environment, these results show that benefits accrue when sustainable forest management provides wood pellets for energy that keep fossil fuel in the ground. In contrast, urbanization is the greatest cause of forest loss in the SE US. It is essential to consistently monitor and assess forest conditions to assess changes, for exports of wood-based pellets for the southern US are expected to grow. Even though use of pellets for energy has more than doubled, the pellet industry constitutes < 1% of US forest products by weight. Therefore, any recent changes in SE US forest conditions are more likely related to the 2008 declines in the housing market. Continued analysis of annual FIA data using the methods outlined in this manuscript provides a scientifically valid approach for ongoing assessment.

Our paper reporting on this analysis of the FIA data is now available at the following site:

Dale VH, Parish ES, Kline KL, Tobin E (2017) How is wood-based pellet production affecting forest conditions in the southeastern United States? *Forest Ecology and Management* 396: 143-149. doi.org/10.1016/j.foreco.2017.03.022
<https://authors.elsevier.com/a/1UxyW1L~GwCo5V>

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