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Dinesh Babu Irulappa Pillai Vijayakumar, Frédéric Raulier, Pierre Bernier, Sylvie Gauthier, Yves Bergeron, David Pothier



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**Fire disturbance data improves the accuracy of remotely sensed estimates of aboveground biomass for boreal forests in eastern Canada**

Dinesh Babu Irulappa Pillai Vijayakumar<sup>1\*</sup>, Frédéric Raulier<sup>1</sup>, Pierre Bernier<sup>2</sup>, Sylvie Gauthier<sup>2</sup>, Yves Bergeron<sup>3</sup>, David Pothier<sup>1</sup>

<sup>1</sup>Centre d'Étude de la Forêt, and Faculté de foresterie, de géographie et de géomatique, Université Laval, 2405 rue de la Terrasse, Québec, QC G1V 0A6, Canada

<sup>2</sup>Natural Resources Canada, Canadian Forest Service, Laurentian Forestry Centre, 1055 du P.E.P.S., P.O. Box 10380, Sainte-Foy Stn., Québec, QC G1V 4C7, Canada

<sup>3</sup>Institut de recherche sur les forêts, Université du Québec en Abitibi-Témiscamingue, 445 boulevard de l'Université, Rouyn-Noranda, QC J9X 4E5, Canada

\* Corresponding author: Tel.: +1 418 656 2131x11116. *E-mail address*: dinesh-babu.irulappa-pillai-vijayakum.1@ulaval.ca

**Abstract**

Accurate estimation of aboveground biomass (AGB) using remote sensing data is still challenging and an approach based on an understanding of forest disturbance and succession could help improve AGB estimation. In the boreal forest of North America, time since last fire (TSLF) is seen as a useful variable to explain post-fire successional change and aboveground biomass (AGB). Within a large study area (> 200 000 km<sup>2</sup>) located in the northeastern American boreal forest, we compared remotely sensed biomass estimates of MODIS (Moderate Resolution Imaging Spectroradiometer), GLAS (Geoscience Laser Altimeter System) and ASAR (Advanced Synthetic Aperture Radar) with inventory-based estimates derived from ground plots, and forest maps at a spatial resolution of 2-km<sup>2</sup>. We

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