



<p>AWARE Quarterly Progress Report Project ID: Q8 Core Site: Title: How can structural metrics from LiDAR of tree crown or stand canopies be used to predict wood fibre properties?</p>	<p>Institution: Université Laval PI: Martin Béland/John Caspersen/Alexis Achim HQP Name: Jean-Romain Roussel</p>
<p>Report Period <input type="checkbox"/> Q1 <input type="checkbox"/> Q2 <input type="checkbox"/> Q3 <input type="checkbox"/> Q4 Year:</p>	<p>Committee Members</p> <ul style="list-style-type: none"> <input type="checkbox"/> See Progress Report Year: _____ Q _____ <input type="checkbox"/> Names: _____ _____ <p>Number of Courses to Complete: 0</p>
<p>Research Progress During this Reporting Period</p> <p>During the period from March to June 2018 the second paper was accepted.</p> <p>The third paper, a review about algorithms and methods to process lidar data that also aims to present the lidR package is in standby. Nicholas reviewed it and we have many improvements to do. However the context led us to temporarily stop to work on this task.</p> <p>Indeed, Jean-Romain defended his PhD on April with success. We also welcomed Jasmin, an intern student thanks to AWARE funding. With Jasmin we worked (and we are still working) on the implementation of several algorithms for individual tree segmentation from the literature. We will then compare them. We can also report that two new partnerships were built, one with an Italian lab and one with a French lab to keep going with the development of tree segmentation within the lidR package,</p> <p>At the same time the lidR package (and also the rlas package) are still gaining importance in the community. The development will continue in 2018-2019 thanks to the support of the ministry of forestry in Québec.</p> <p>Paper #1 published Roussel, J.-R., Caspersen, J., Béland, M., Thomas, S., & Achim, A. (2017). <i>Removing bias from LiDAR-based estimates of canopy height: Accounting for the effects of pulse density and footprint size</i>. Remote Sensing of Environment, 198, 1–16. https://doi.org/10.1016/j.rse.2017.05.032</p> <p>Paper #2 published Roussel, J.-R., Béland, M., Caspersen, J. & Achim, A (2017). <i>A mathematical framework to describe the effect of beam incidence angle on metrics derived from airborne LiDAR: the case of forest canopies approaching turbid medium behaviour</i> Accepted by Remote Sensing of Environment.</p> <p>Paper #3 work in progress (85%) Roussel, J.-R., Auty D. & Achim, A Algorithms and software for ALS in forestry and ecology – A critical review,</p>	

Annual General Meetings AGM1 <ul style="list-style-type: none"> ▫ Attended ▫ Reported results 	AGM2 <ul style="list-style-type: none"> ▫ Attended ▫ Reported results 	AGM3 <ul style="list-style-type: none"> ▫ Attended ▫ Reported results
Research Targets for next Reporting Period Work for this project is completed.		
HQP Signature:  Date: 23/05/2018		PI Signature:  Date:23/05/2018