

Leading Innovations in Canadian Forest Operations

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Abstract

Canadian forest operations are at the forefront of leading innovations spearheaded by the work of research organizations such as Laval University's Forac consortium and the Forest Operations research effort at FPIInnovations. New challenges continuously drive change in Canadian operations including a shrinking timber supply, an acute shortage of skilled and available manpower, and more frequent major natural catastrophes such as extensive wildfires and insect epidemics, namely the Mountain Pine Beetle and the Spruce Budworm, likely resulting from climate change. This presentation will focus on the new opportunities to address these challenges with innovative technologies and processes being fostered by Forac and FPIInnovations. These will include on the Forac side adaptive client-supplier relationship management for increased agility and reliability, collaborative value chain planning and application of artificial intelligence (AI) to wood supply processes. FPIInnovations will be especially active in the following areas: new high-capacity trucking configurations, using Lidar to characterize the forest structure and make better operational decisions, weatherproofing harvest operations to shortening winters, automated processes to analyze remote-sensing/drone-acquired imaging for pre and post-harvest surveys and the four components of the Forestry 4.0 Initiative (the real environment, the internet of forests, big data and advanced procurement systems). The benefits of strategic partnerships between universities, FPIInnovations and industry and opportunities to extend these collaborations at an international level will be outlined.