ONGOING RESEARCH PROJECTS

2016-2017

"Wood Processing" Program

Project Title	Team	Objectives	Collaborators	Deliverables
Evaluation of a next-generation tool for milling floor boards	Carl Tremblay	• Adjust the milling parameters on next-generation diamond cutting tools and evaluate the performance of these tools in terms of useful life.	• Natural Resources Canada	• Report available in April 2017
Dimensional stability of thick panels	Carl Tremblay	• Improve the dimensional stability of thick panels used, among other things, as tabletops.	• FPInnovations industrial partners	• Report available in April 2017

ONGOING RESEARCH PROJECTS
2016-2017

"Resource Evaluation" Program

Project Title	Team	Objectives	Collaborators	Deliverables
Characterization of Quebec hardwood using the SilviScan tool	• Isabelle Duchesne	• Characterize the wood properties and growth rates of four hardwood species in Quebec: red oak, American beech, red maple and paper birch.	• Natural Resources Canada (CFS-LFC) • Ministère des forêts, faune et parcs du Québec • FPInnovations	• Report available in June 2017
Prediction of the quality of hardwood logs and hardwood sawmilling (provincial research tool in Duchesnay)	• Isabelle Duchesne* • Steve Bédard	• Model the quality of sawmill products based on quality categories for stems and logs at the Duchesnay site.	• Ministère des forêts, faune et parcs du Québec	• Report: Knowledge of the connections between silviculture, quality and the value of hardwood (available in December 2016)
Dynamic temporal inventory in New Brunswick *(at the individual tree level)*	• Jean-François Côté • James Farrell • Olivier Van Lier	• Use innovative technologies to develop tools and techniques for the forestry industry in order to optimize the forest value chain, from resource to market. These developments include predictions on quality and structure at the individual tree level within the context of an improved forest inventory. More specifically, the use of land LiDAR and the 3D modeling of trees will make it possible to increase the precision of predictions regarding the quality of the stem and main branches.	• Northern Hardwoods Research Institute • J.D. Irving Ltd. • Université de Sherbrooke • Université du Québec à Montréal • Office National des Forêts (France) • Université Laval • New Brunswick Department of Energy and Resource Development • Leading Edge Geomatics	• Collaborative development of the *Computree* open-source platform in order to reproduce entire forest plots using land LiDAR and extracting relevant information regarding the quality of individual trees (available in 2017-2018)

ONGOING RESEARCH PROJECTS
2016-2017

"Forestry Operations" Program

Project Title	Team	Objectives	Collaborators	Deliverables
Simulation of various silvicultural systems in uneven-aged forests using martelloscopes in New Brunswick	• Jean-Martin Lussier * • Jean-Philippe Gaudreau	• Evaluate the quality, quantity and value of the long-term timber production of typical hardwood stands in response to several mechanized silvicultural systems and their variants using growth simulators and martelloscopes.	• Northern Hardwoods Research Institute • Université de Moncton • Ministère des forêts, faune et parcs du Québec • CERFO	• Research report (available in March 2017)
Partial cuts in heterogeneous stands using a high-definition LiDAR map	• Jean-Philippe Gaudreau • Jean-Martin Lussier * • Philippe Meek	• Develop a method for analyzing stands and completing partial cuts using onboard maps guiding the operator in irregular shelterwood cuts in multi-treatment mode.	• Northern Hardwoods Research Institute	• Benefits report (available in December 2016)
Calibration of a transition matrix to simulate the evolution in the growth and quality of trees in hardwood forests	• Jean-Martin Lussier • Jesus Pascual Puigdevall	• Based on growth monitoring data, calibrate a simple model for predicting the evolution in the number of stems for each diameter and quality category in Quebec and Ontario.	• Ontario Ministry of Natural Resources • Ministère des Forêts de la Faune et des Parcs du Québec • Northern Hardwoods Research Institute	• Scientific article (available in March 2017)