

COMPLETED RESEARCH PROJECTS 2015-2016

“Wood Processing” Program

| Project Title | Team | Objectives | Collaborators | Deliverables |
|---|---|--|---|---|
| Moisture control before and after drying (softwood and hardwood) | <ul style="list-style-type: none"> Manon Gignac | <ul style="list-style-type: none"> Summarize and update the available information on moisture control before and after drying. Prepare a good practices guide. | <ul style="list-style-type: none"> FPInnovations industrial partners | <ul style="list-style-type: none"> Report: Moisture control before and after drying |
| Development of techniques for repairing microcracks and other small defects | <ul style="list-style-type: none"> Carl Tremblay | <ul style="list-style-type: none"> Develop techniques for completing effective, quick and long-term high-performance repairs on microcracks and other small defects. | <ul style="list-style-type: none"> FPInnovations industrial partners | <ul style="list-style-type: none"> Report: Development of techniques for completing repairs on microcracks and other small defects |
| New hardwood defect detection technologies | <ul style="list-style-type: none"> Zarin Pirouz | <ul style="list-style-type: none"> Evaluate the potential for using new technologies such as high-resolution cameras/lasers, the LASAR system, the GPR system and a low-resolution CT scanner for detecting various defects in hardwood. | <ul style="list-style-type: none"> Natural Resources Canada University of New Brunswick | <ul style="list-style-type: none"> Report: Defect detection technology for hardwood manufacturing |
| New hardwood defect detection technologies – continuation | <ul style="list-style-type: none"> Jean McDonald | <ul style="list-style-type: none"> Evaluate the potential for using a vision system to measure the diameter and width of the heartwood in order to improve the efficiency and productivity of operations to measure and categorize hardwood logs. | <ul style="list-style-type: none"> Natural Resources Canada To be determined | <ul style="list-style-type: none"> Report: Detection of defects in hardwood logs |

* Project Manager

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“Resource Evaluation” Program

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|--|--|---|--|--|
| Variation in the mechanical properties of sugar maple and yellow birch wood in New Brunswick | <ul style="list-style-type: none"> • Isabelle Duchesne* • Chhun-Huor Ung • Edwin Swift | <ul style="list-style-type: none"> • Evaluate the tree, stand and inter-site variations for modulus of elasticity (MOE) and modulus of rupture (MOR) in maple and birch. • Develop tree-level statistical models. | <ul style="list-style-type: none"> • New Brunswick Department of Energy and Resource Development • Industrial partners | <ul style="list-style-type: none"> • Report: Knowledge of the internal properties of hardwood |
| Development of decision-support tools for hardwood stand silviculture | <ul style="list-style-type: none"> • Jean-Martin Lussier • Jesus Pascual Puigdevall* • Éric Labelle | <ul style="list-style-type: none"> • Predict the effects of silvicultural prescriptions on the economic yields of stands. | <ul style="list-style-type: none"> • Northern Hardwoods Research Institute • New Brunswick Department of Energy and Resource Development | <ul style="list-style-type: none"> • Report: Planning tool for the management of uneven-aged stands |

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“Forestry Operations” Program

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|--|--|--|---|--|
| Productivity equations for partial and clear cutting in mixed and hardwood stands | <ul style="list-style-type: none"> Philippe Meek* Jean Plamondon Francis Charette | <ul style="list-style-type: none"> Develop new productivity equations for various harvesting steps in softwood, mixed and hardwood forests for clear cutting and partial cuts. | <ul style="list-style-type: none"> FPIinnovations industrial members Ministère des forêts, de la faune et des parcs du Québec | <ul style="list-style-type: none"> Integration of these new equations in the FPIInterface software and the FPIProcalc web tool https://procalc.fpinnovations.ca (exclusive to FPI members) |
| Operational guides for partial cuts in hardwood and mixed forests | <ul style="list-style-type: none"> Philippe Meek* Jean-Philippe Gaudreau | <ul style="list-style-type: none"> Establish the procedures to be followed for implementing a harvest operation using the 1-2-3 method for an array of silvicultural treatments for NB’s public forest. | <ul style="list-style-type: none"> Northern Hardwoods Research Institute | <ul style="list-style-type: none"> Guide for managing partial cutting treatments in New Brunswick |
| Harvesting procedures for irregular shelterwood cutting in the Mauricie region | <ul style="list-style-type: none"> Philippe Meek | <ul style="list-style-type: none"> Ensure that all regional partial cutting harvesting mandates can be managed using the 1-2-3 method. | <ul style="list-style-type: none"> Groupe initiative Mauricie | <ul style="list-style-type: none"> Report: Productivity models based on wood sorting Report: Effect of sorting on harvest productivity per whole tree |
| Preliminary evaluation of the 1-2-3 method for selection cutting in New Brunswick | <ul style="list-style-type: none"> Philippe Meek | <ul style="list-style-type: none"> Validate the section cutting treatments used in public forests that can be parameterized with the procedures from the 1-2-3 method. | <ul style="list-style-type: none"> Groupe Savoie Northern Hardwoods Research Institute | <ul style="list-style-type: none"> Report: Preliminary evaluation of the 1-2-3 method for selection cutting in New Brunswick |
| Development of a model for predicting the productivity of felling and bunching in secondary trails | <ul style="list-style-type: none"> Philippe Meek | <ul style="list-style-type: none"> Improve the determination of harvest costs and performance in the protection of residual stands using secondary trails for the partial cutting of hardwood forests | <ul style="list-style-type: none"> Groupe Savoie Northern Hardwoods Research Institute | <ul style="list-style-type: none"> Report: Development of a model for predicting the productivity of felling and bunching in secondary trails |