

## JP HOLDCO INC.: WORKING WITH LARGE WOODLOT OWNERS

### MOBILIZING NHRI'S TOOLS TO IMPROVE FOREST OPERATIONS

JP Holdco Inc. owns and manages over 3000 hectares of forest in the Upper-Madawaska region of northwestern New Brunswick. The team manages their woodlots and operates their own harvest equipment and crews. They also own and manage a very considerable maple syrup production operation. Basically, a great example of managing mixed forests stands of the Acadian Forest.

The owner of the company, Jean-Paul Ouellet, is a very well-known businessman and philanthropist in the region. Mr. Ouellet built one of Canada's largest poultry business from the ground up. He has a reputation for being very entrepreneurial, having an impressive business mind and great flare for making solid deals. Considering his extensive business background, he has always been very aware of the fact that to successfully manage such a large track of land, his forest operations needed to be financially viable. More importantly, Mr. Ouellet wanted to ensure that his land will gain value, both financially and from a sustainability standpoint. He made it very clear to us that his main objective was to leave behind a more productive and sustainable forest.

His management team was doing a great job of attaining these objectives based on their extensive experience in forest operations and solid boots on the ground knowledge of what it takes to regenerate a quality stand. However, being focused on continuous improvement, and realizing that they were in a very competitive market, they wanted to bring their forest management capacities to the next level. This meant establishing forest management systems and integrating cutting-edge tools. This would allow them to manage their land as a whole and to make clearer yearly harvest decisions, based on factors like species composition, stand vigour, tree quality, regeneration potential, etc.

We met with the JP Holdco Inc. team back in 2019 to discuss avenues for working together. Always living by our motto to "under promise and over deliver", we decided to start a small project to showcase our precision forestry tools. We would complete a precision inventory for one of their woodlots and based on the results make silvicultural recommendations using the [NHRI's Silviculture Prescription System](#). This approach is what we call the NHRI Precision Block Planning System.



Jean-Paul Ouellet, owner of JP Holdco Inc.

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The NHRI Precision Block Planning System can be divided into three distinct stages. The first step is to observe, analyze and stratify the area under study by using remote sensing and precision forestry technology.

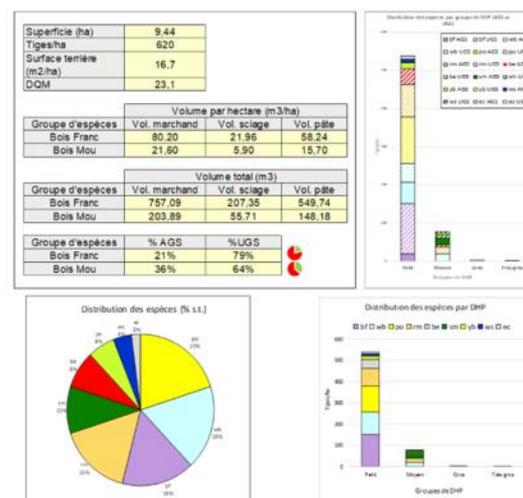
Remote sensing with the help of GIS software is also used to describe topography, hydrology, soils, and other ecological criteria. This work also makes it possible to design the maps necessary for the next step, namely, the field inventory. Once the stratification is done, the sampling plan is developed.

The field inventory allows the team to collect precise data, essential for the silviculture diagnosis. The NHRI field inventory method is done by establishing a variable radius plot where data for the diameter at breast height (DBH) and tree quality (risk and form) are collected. In addition, the total height as well as the height of the crown base is taken from one tree in five.

The **NHRI Silviculture Prescription System (NHRI SPS)** is then used to allocate a prescription to each plot. The silvicultural diagnosis, the preparation of the prescription and the projection of the harvest volumes, together, consist of the last step. This work is then compiled into a report containing all the maps, data, and potential harvest volumes per species.

After seeing the results, the JP Holdco Inc. team saw value in our work for the company so it was decided that we would embark on a much larger project that would ultimately see them build the in-house capacity needed to use these systems, technologies, and tools to manage their forests. The objective was now to bring support to them in building management systems and integrating the required tools. To finance a part of NHRI's work the company applied for funding through **NBIF's Innovation Voucher Fund**. NBIF recognized the project's potential for innovation and awarded funding to cover part of the applied research work done by our team.

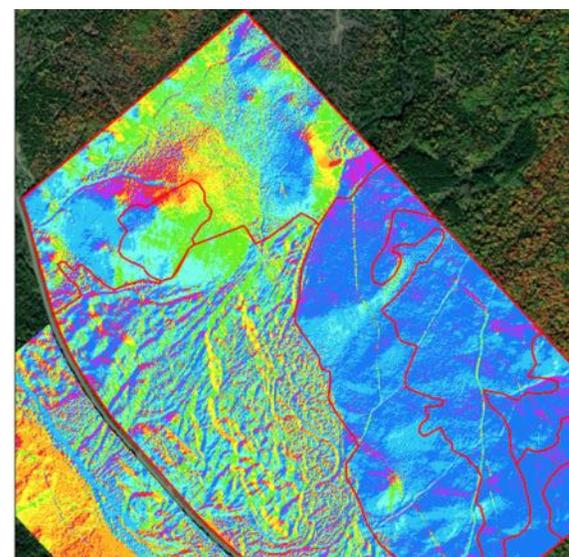
Even though ICT companies, like **Remsoft Inc.**, are actively working to adapt their tools to smaller operations, as it stands today, there are very limited off the shelves options for forest owners like JP Holdco Inc. Existing forest management systems are geared more towards very large industrial landowners with teams of foresters and forest management services provider.



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*Tailoring forest management solutions for forestry SME's!*



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The goal of this on-going project is to support JP Holdco in integrating these tools and to build a simple forest management system that is tailored to their needs in terms of their silvicultural objectives. What our team aims to do, in collaboration with the company, can be broken down into 6 objectives:

- Introduce the firm to state-of-the-art forest inventory tools and processes.
- Produce a digital precision forest inventory of the woodlots that include key information to make sound business decisions.
- Create a custom GIS-based database to incorporate in the company's management system.
- Develop a long-term management plan for the land.
- Implement an adaptive management process to increase productivity, reduce costs and improve profitability.
- Transfer the capacity to the business by ensuring they have training related to operating the developed tools and maintaining the established processes.

NHRI is also working with the JP Holdco Inc. team to run testing pilots for technologies that are on the verge of being commercialized. Most notably, we are currently running a pilot testing SceneSharp's **fuze go® AI** technology in a forest management setting. SceneSharp's flagship technology, improves the quality of any image from any source whether it be from satellite, drone, or security camera by revealing the data behind the picture. The AI model is applied to the image, enhancing the data, and bringing it to life. This means better data is available through machine learning to support effective planning, management and decision making. NHRI is working with **SceneSharp Technologies**, a New-Brunswick based company, to enhance their species determination capabilities, build a forest stand vigour assessment tool and explore other technology solutions for forest managers. Leveraging remote sensing and machine learning, the research collaborative will yield predictions at the 10-metre resolution level.

It is obvious that the project we are working on with JP Holdco is a win-win for everyone involved. The company gains precious tools and expertise that will ensure they are better equipped to manage their land profitably and sustainably. Our team and research partners gain a very attractive testing ground, and more importantly, the opportunity to better understand the needs of SME's operating in the forestry sector so we can develop useful, and tailored, tools that will help them implement effective forest management solutions. We appreciate the trust the company has placed in our team and we are working hard to make sure we meet their needs. Stay tuned to follow the evolution of the project.





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