



PROMISING PARTNERSHIP: SCENESHARP TECHNOLOGIES

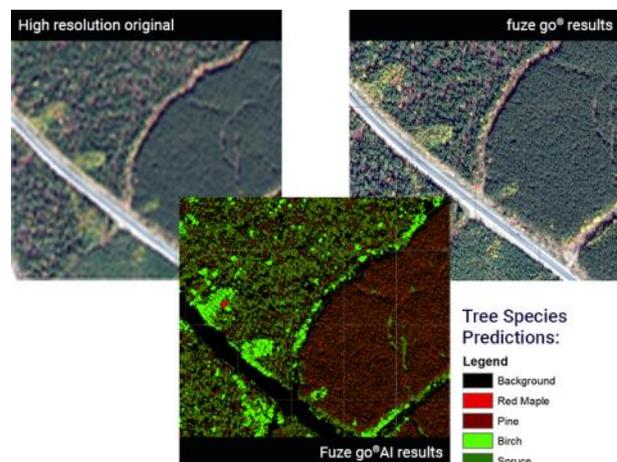
Improving precision forest inventories with the help of artificial intelligence!

NRHI has entered into a partnership with New Brunswick-based **SceneSharp Technologies** to enhance their species determination capabilities, build a forest stand vigour assessment tool and explore other technology solutions for here at home and around the world. Leveraging remote sensing and machine learning, the research collaborative will make predictions at the 10-metre resolution level.

“Our institute was created to partner with innovative companies like SceneSharp,” says Gaetan Pelletier, Executive Director. “This collaboration will pair their high-quality visual data collection capabilities and artificial intelligence technology with our expertise in forest management and knowledge transfer. This will lead to deeper learning and greater digitalization of the industry, especially regarding the upstream portion of the forest products value chain. We have worked with many organizations in the past few years but SceneSharp’s cutting edge technology and agile approach separates them from the pack.”

SceneSharp’s flagship technology, **fuse go AI**, 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.

“NRHI is helping us to get to a higher level of accuracy of species determination by providing us with their training data and industry knowledge,” says Rick MacPhee, SceneSharp CEO. “The training data is teaching our AI to more effectively map tree species and monitor any changes in forest health such as pest infestations. We are building a smarter way for forest companies, woodlot owners and managers to protect and improve their investment.”



Accurate mapping of species is critical to managing forest inventory, making biomass and stand volume estimation but more importantly, make better silviculture decisions. In large forests and woodland areas, it is difficult to get current and precise information on the spatial distribution of species, abundance and density, especially if the species composition is as complex as seen in eastern North America.



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Making the digitalization of the forest products value chain a reality!



Photo: Myriam Cyr Photography

Relying on ground-based or aerial survey data, which could be up to 10 years out of date, makes it very challenging to conduct sustainable forest management practices and resource evaluation.

Together, NHRI and SceneSharp will advance its fuse go technology to deliver four to six times improved quality across all spectral bands from any satellite or aerial sensor and increase the usefulness from a wide range of data sources. It will allow for specific species predictions at the micro strand level. This will be achieved through the capture of unique spectral signatures (fingerprints) for forests and crops as well as for other natural and man-made features.

“SceneSharp’s fuse go AI 2.0 will track trees over their entire lifecycle if needed, enabling forest managers to grow a better product, faster and more cost-effectively,” continues MacPhee. “Woodlot owners can also transition to a proactive management strategy, dealing with complex conditions as they arise.”

Assessing forest health and complexity is key to assessing its value. Having up-to-date information about the quality, types and number of trees will enable forestry companies and landowners to determine what is required to harness the potential. The analytics can also be used to track changes in conditions and provide the necessary information for calculating accurate forest inventories that include carbon.

“Our role is to bring relevance to research and represent the voice of the customer,” says Pelletier. “They are looking for AI-based solutions that support decision-making, monitors risk and increases sustainability and profitability. This initiative aligns well with the needs of industry, woodlot owners and our institute’s partners. What’s even more exciting is this world-class technology will be developed here in New Brunswick.”

The goal is to increase SceneSharp’s ability to accurately predict species with 80 to 90 percent accuracy. It currently predicts eight species, seven times out of 10. That information, coupled with vigour, will allow for better predictions of growth rates. “The strengthening of our accuracy and analytics will enable us to provide an even better solution,” said MacPhee. “This learning from this partnership will allow our customers to grow higher quality trees, faster. They will be more agile and better positioned to make solid business decisions, while capitalizing on the advantages automation presents to the industry.”



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