Linking site conditions to black ash wood growth and quality

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PROJECT LOCATION:
Ndakina, traditional territory of the Wabanaki Nation, located in southern Quebec

Project Drivers

This 2 Billion Trees (2BT) program research project will support Indigenous communities and organizations that rely on forests for environmental, economic and cultural benefits. Black ash (*Fraxinus nigra*, called Maalhalkws in the Wabanaki language) is a native hardwood tree that colonizes wetlands. It is an important material for Indigenous peoples, who use it for basketry and other traditional activities. The black ash carries a spiritual and cosmological dimension for the Wabanaki Nation and other Indigenous groups. The tree is believed to be the source of human beings and is therefore sacred. The use of black ash for basketry is also a vector for cultural and inter-generational transmission, allowing Indigenous peoples to practice and transmit their traditional activities down to their children. However, the supply and quality of this valuable species is under threat due to reasons such as the emerald ash borer. One way to avoid a supply disruption and allow the continuation of traditional Indigenous activities is to plant black ash in strategic locations. The establishment of plantations in degraded areas such as agricultural riparian strips could provide a quality local supply to Indigenous peoples, while improving the ecosystem services provided by these areas. However, the lack of knowledge on site conditions conducive to the growth and quality of black ash wood for basketry makes this avenue difficult to achieve. The objective of this project is to co-develop knowledge on site conditions (e.g., soil properties, texture, drainage and companion species) that promote optimal black ash growth and wood quality for traditional activities of importance to Indigenous communities.

Project Approach

This project will create knowledge that combines a scientific approach with Indigenous traditions and practices. The team will produce new data on site conditions conducive to black ash growth and wood quality for basketry. The team will leverage current knowledge and data, such as ongoing research at Laval University on ash wood quality and a black ash inventory conducted by the Wabanaki Nation that began in 2021.

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Anticipated Outputs and Impacts

This project will support Indigenous forest communities and help attain 2BT program outcomes, including increased carbon sequestration and co-benefits such as biodiversity and improved water quality. The results generated by this project will contribute to the scientific and traditional knowledge of black ash. This will help develop a better understanding of the optimal site conditions for growth and address the potential negative effects of global change on the species. Knowledge transfer documents and activities will be produced for the Wabanaki community and the public, along with a journal article for the international scientific community. This knowledge will better inform pre-planting site management activities for the 2BT program. It will serve as a basis for advice on choice of sites and site preparations to optimize net GHG benefits.