



The Wood ID Project

Cataloguing Canadian trees to help tackle illegal logging

What is illegal logging?

Illegal logging is the harvesting of wood in violation of laws and regulations in place in a given country. This practice could include harvesting timber from protected areas, felling protected species or exceeding logging quotas.

In recent decades, the international trade in illegal wood has grown to such an extent that several countries have collaborated to take vigorous measures to curb this activity. According to INTERPOL (2019), between 15 and 30% of all timber sold worldwide is logged illegally. In some developing countries, more lumber is harvested illegally than legally. Worldwide, illegal logging of wood is valued at between \$51 and \$152 billion each year (INTERPOL 2019).

Illegal operators such as organized crime avoid taxes and ignore safety and environmental regulations, which allows them to sell the wood at lower prices than Canadian producers who must operate under very strict laws, regulations and certification standards. Furthermore, if wood products cannot be tracked and identified, the risk of finding wood products derived from illegally sourced wood on common store shelves, increases.

Illegal harvesting is hurting biodiversity and slowing down the fight against climate change. In particular, it decreases sequestration of carbon dioxide, which frequently follows deforestation, especially in tropical countries. This illegal practice also has social impacts in which the lack of recognition of rights for land and resource use can lead to conflict that affects the livelihood of forest-dependent communities (Reboredo 2013).

Canada's role

Canada is committed to deterring illegal trade and contributes to developments to improve the traceability and identification of wood in international markets. This commitment requires increasing the capacity to identify wood and building networks at both the national and international level.



Many tools and methods, including biochemical and genomic profiles and anatomical features, can accurately identify wood products. Often wood can be traced at the species level and sometimes can even be traced to its geographic origin. However, developing such tools and methods relies on collecting well-identified reference samples so that unknown samples can be reliably compared.

Through the Wood ID Project, Natural Resources Canada, Environment and Climate Change Canada, and the Canada Border Services Agency are using their scientific research capacities to provide enforcement officers with tools to:

- prevent importation of illegal forest products
- contribute to international efforts to combat illegal logging and trade
- maintain a strong reputation for Canadian forest products exports as sustainable and legal

This research entails developing a reference database that registers reference specimens and techno-scientific tools (Godbout et al. 2018) to identify forest species used in the manufacturing of wood products.

Internationally, significant efforts such as the World Forest ID Project (<https://worldforestid.org/>) are on-going to establish a global, open source database of geo-referenced wood samples from a wide range of forest species to combat illegal logging.



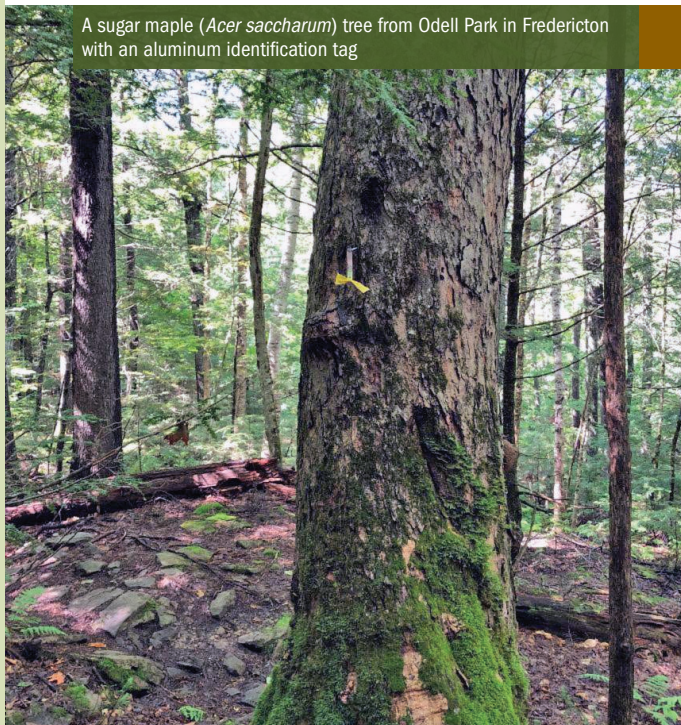
Katie Burgess from Natural Resources Canada at the Atlantic Forestry Centre in Fredericton, New Brunswick, collecting leaf samples from a northern red oak (*Quercus rubra* L.) tree

The genomic and biochemical profiles and tree-specific information collected during this first phase will be included in a reference collection of our native tree species to track Canadian timber. This collection will be used within the Wood ID Project to improve and validate techniques and methods for identifying wood. More specifically, a smartphone-based application will be used to collect and store geospatial, physical and photographic data from selected forest trees. Samples from those trees will also be collected and visually curated before they are analyzed using the multiple methods mentioned earlier.

In the future, the scale of the project will become national for multiple species, and this scale will be possible only in conjunction with multiple stakeholders. This reference database will support Canada's efforts to fight the illegal trade of wood products through developing science and technology for identifying wood by sharing samples, knowledge, technology, and data at both the national and international level.

Referencing our native species

The Wood ID Project has many components. One component acquires exotic samples for species identification while another collects and curates physical samples of Canadian native species to include in a Canadian catalogue and reference database. To achieve this, NRCAN will be adapting a protocol based on international standards (Global Timber Tracking Network [GTN]: <https://globaltimbertrackingnetwork.org/>). This protocol consists of acquiring geo-spatial data, both physical and photographic, as well as leaf and wood core samples of selected tree species across their North American ranges.



A sugar maple (*Acer saccharum*) tree from Odell Park in Fredericton with an aluminum identification tag

References:

Godbout, Julie; Bomal, Claude; Farr, Ken; Williamson, Miranda; Isabel, Nathalie. (2018). Genomic tools for traceability: Opportunities, challenges and perspectives for the Canadian forestry sector. *The Forestry Chronicle*. 94. 75-87. DOI: 10.5558/tfc2018-010.

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