



Tree Poaching: How AI & Technology are Helping to Track Stolen Timber



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Tree poaching is a growing problem worldwide, especially in areas where enforcement is difficult and timber prices are high.

The illegal harvesting of trees from protected lands and conservation regions is rising each year. This is especially the case along the Pacific Northwest and coastal rain forests of British Columbia where an unprecedented level of timber poaching is taking place.

Timber theft isn't only prevalent along the Pacific Northwest and coastal rain forests of British Columbia, it's a worldwide problem especially in areas that support expensive timber which is often considered rare and exotic; such as rosewood and teak.

Latin America and Southeast Asia are two such areas home to some of the world's most exotic and rare woods, as well as some of the largest illegal trade of timber.

What makes timber theft so difficult, is that it is difficult to trace.

In the fight against tree poaching, new advances in technology from *Drone surveillance*, to *DNA genetic sampling of wood* and *timber fingerprinting* are helping with the identification and traceability of stolen timber — from the point of harvest to its final destination.

The Battle Against Timber Theft:

One reason timber theft has become so prevalent is that enforcement is difficult as tracing and tracking timber theft is often a very time-consuming and labor-intensive process.



Washington State Department of Natural Resources - *You can help stop timber theft*, Youtube

Fortunately, recent advances in technology and artificial intelligence can aid in the tracking and tracing of illegal timber theft.

Drone Surveillance & Aerial Surveys

Drones are increasingly being used to track, record, and monitor aerial data within forested areas. Drones are being used to find and monitor logging activities as well as have the ability to measure forest stockpiles, capture logging variances, and determine volume estimates.

The combination of computer vision and drones are providing the forestry sector also have the ability to map harvest sectors and perform post-harvest assessments, perform inventory calculations and even generate VR walkthroughs. One such company pioneering the aerial approach is Canadian-based [CanDrone](#), developing drones specifically for use within the forestry sector.

DNA (Genetic) Fingerprinting

A team at the [University of Adelaide](#) in Australia developed a genetic profiling method that can be used to identify and compares wood based on genetic samples.

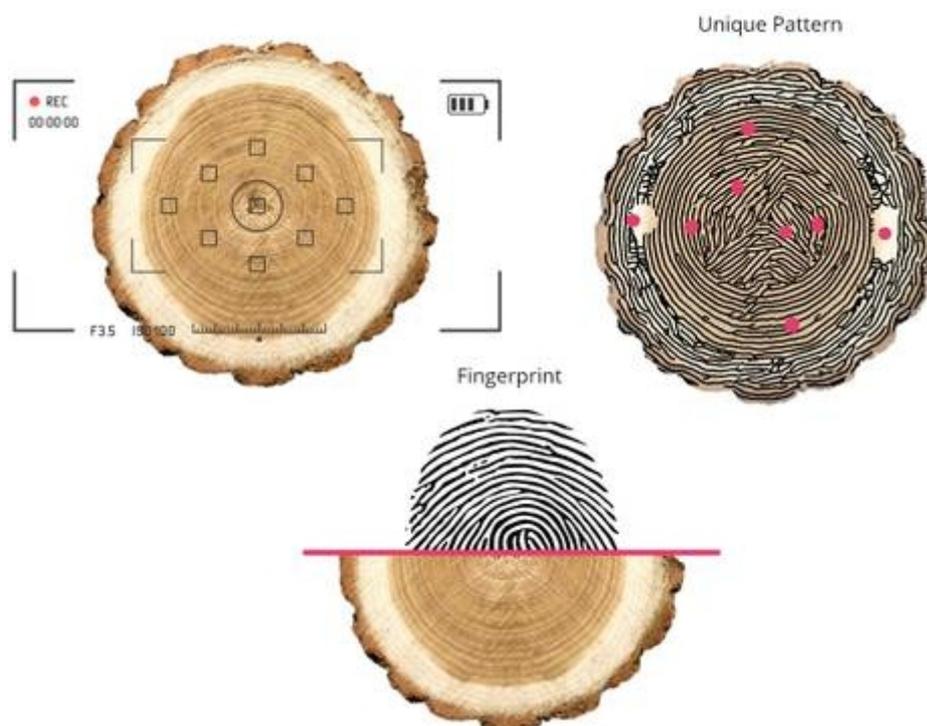


Just like humans, each tree has a unique genetic makeup, making it possible to match samples of the illegally harvested timber and compare them with stumps of the trees from which they were cut, using a technique called DNA profiling.

Genetic fingerprinting offers a high level of accuracy, however, this accuracy also comes at a cost that can make its use prohibitively expensive and impracticable for many use cases.

Visual Fingerprinting

Timber Fingerprinting is the identification of a tree by its unique ring patterns. Developed by [Timber Fingerprint](#), this technology uses an image (taken from a mobile device) to capture the cross-section of the log and identify its unique characteristics and then match the unique pattern to a database.



Timber Fingerprinting is a novel approach for timber identification and offers a simple and time-saving method for the recording and comparison of logs.

Most importantly, timber fingerprinting offers the ability to perform matches on large sets of data and offers speedy analysis and results.

Technology Helping to Reduce Timber Theft:

Illegal logging and timber theft is a significant problem around the world, causing environmental damage and contributing to the destruction of the world's forests.

Enforcement has historically been difficult and time-consuming, but with new advances in technology, it is hoped this will help to curb timber theft and help to support more legitimate and environmentally friendly forestry use.