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# Citizen enforcement in the forest sector: examples and experiences

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March 21, 2019

Environmental Law Institute, Washington DC

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**WRI's MISSION** | To move human society to live in ways that protect Earth's environment and its capacity to provide for the needs and aspirations of current and future generations.



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**WRI's WORK** | We work with governments, companies, and civil society to build solutions to urgent environmental and development challenges.

# WRI's Forest Program

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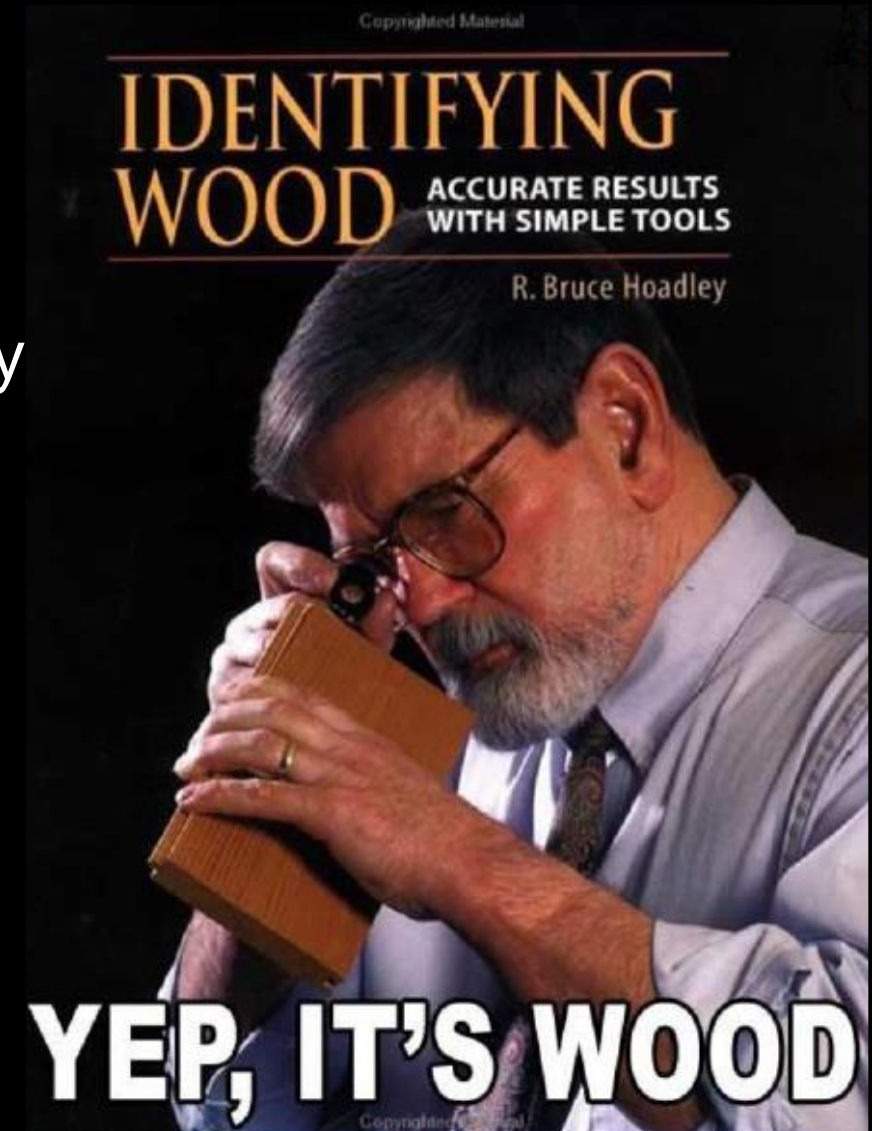


# Wood Identification

## Reference databases:

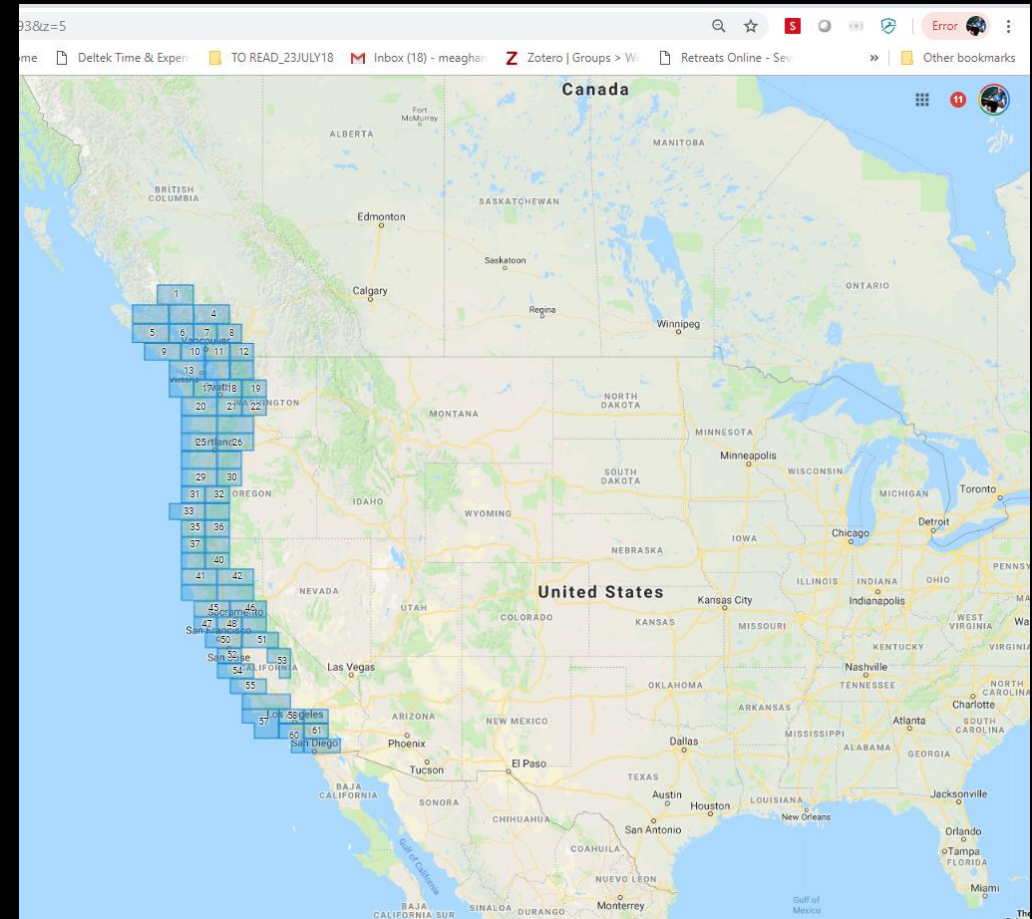
- For each species for each given technology (with the exception of stable isotope data)
- Georeferenced data from across the species entire range
- Requires herbarium vouchers for verification

All of the above amounts to a significant amount of time and money



# Wood Identification


- Partners: Adventure Scientists, New Mexico State University and DNA4Technologies
- Developed sampling strategy
- Recruited volunteers using social media
- Developed online training and a mobile application
- Let the volunteers loose!




# Wood Identification

**Illegal logging is a global ecological disaster.**  
Erodes biodiversity · Exacerbates climate change · Bankrolls corruption


Up to 30%\* of the international wood harvest is illegal.



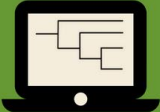
Our volunteers collect live tissue samples across the ranges of high-value timber species.  
First up: bigleaf maple in North America.



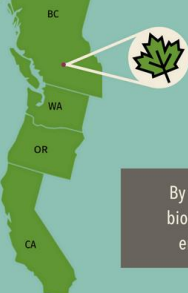
Expert geneticists at DNA4 Technologies and New Mexico State University extract, sequence, and catalog DNA from each sample.



This information is used to create a reference library of genetic variation for each tree species across its range.




When DNA is successfully recovered from a suspicious wood sample, it can then be compared to the database to reveal its species and point of origin – illuminating the once invisible differences between legal and illegal timber.



By cracking down on tree poaching, we can protect biodiversity, endangered species, and wild places, ensuring more sustainable forests for everyone.

\* <http://wedocs.unep.org/handle/20.500.11822/8030>

[adventurescientists.org/timber](http://adventurescientists.org/timber)



Verizon 11:07

Leaf\_Crew Save

7 Did you arrive at this site via a publicly accessible route?

Yes

No

8 If no, please describe how you arrived at this location. Are you on private property? Did you need permission to access this site via a private trail/road? If so from whom?

9 Wrap the measuring tape snugly around the trunk of your sampling tree at a height of 1.3 meters from the ground to determine its girth in CENTIMETERS. Record this number here.

Verizon 19:45

Wood\_Crew Save

1 Scan the leaf sample QR Code that is unique to this collection site. This code should reflect your wood zone number (WZ#), the number of collection sites you've visited, and the sample type (LEAF)

2 Please enter your first name:

3 Please enter your last name:



# Wood Identification

## Tracking Timber Project - Wood Crew Protocol

### III. Taking a tree core



#### Step 1: Assemble the increment borer

- Untwist and remove the extractor from the drill bit and the handle.
- Don't put the extractor on the ground!
- Remove the bit from inside the handle, and lift the small latch on the handle.
- Insert the square end of the bit into the hole on the opposite side of the handle from the latch.
- Close latch onto the notch in the bit.



#### Step 2: Select your coring location

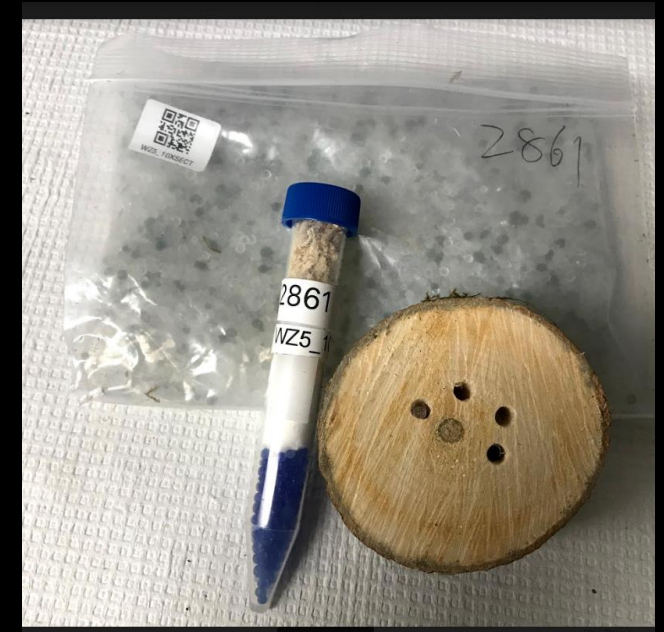
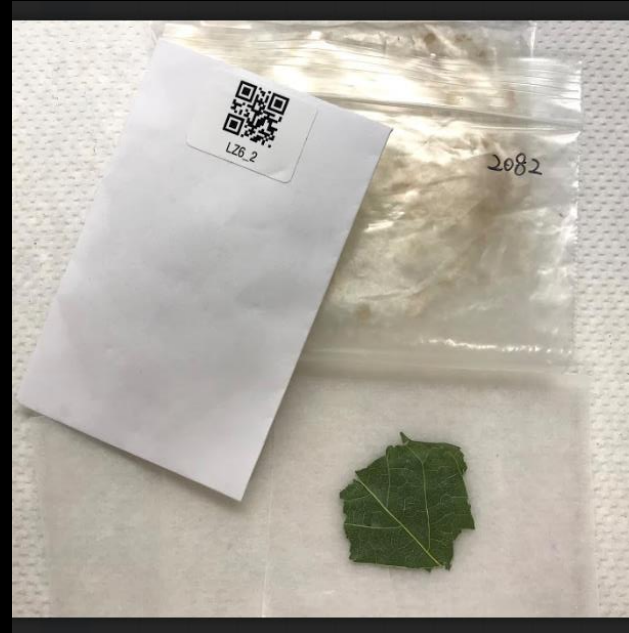
- Choose a location on the tree at the height of 1.3 meters (4.5 feet) from its base.
- If your sampling tree has multiple trunks, sample from the trunk that was directly connected to your sampling leaf.
- Aim the bit at the very center of the tree.
- Place the bit tip between two furrows in the bark to help stabilize the borer.



#### Step 3: Insert the increment borer

- Hold the stem of the bit steady with your non-dominant hand while slowly twisting the handle clockwise with your dominant hand.
- Keep the bit as stable as possible, while using your bodyweight to lean into the borer.
- A field partner can help by holding the bit steady.

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# Wood Identification

- Over 100 volunteer for field collections
- Acquired over 1000 reference samples in 5 months from CA to BC
- A genome-wide reference database for big leaf maple is under development
- Laying groundwork for Indonesia project



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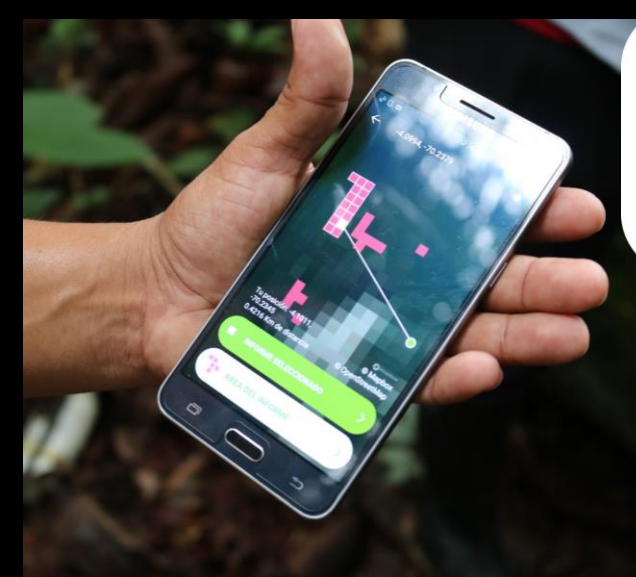
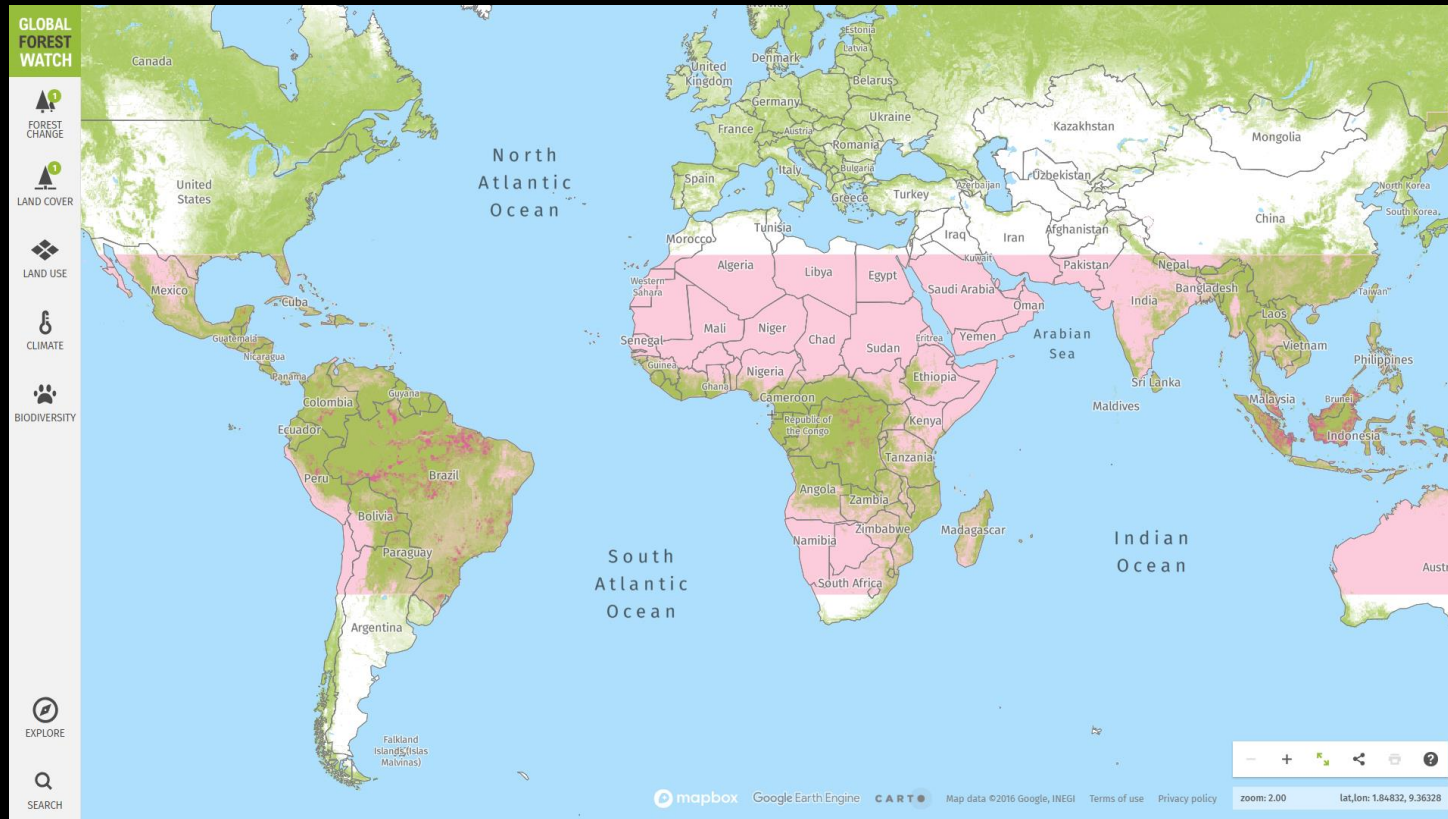


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# Community monitoring



A mobile solution for low connectivity









“The satellites allow us to make decisions in real time, and deliver this information to State institutions for them to take immediate action.”

*-Jorge Perez of ORPIO, representing 15 indigenous ethnic groups in Peru*

# Lessons and challenges

- Training
- The role of intermediaries
- Risks
- Governance

# Thank you!

[www.forestlegality.org](http://www.forestlegality.org)  
[www.globalforestwatch.org](http://www.globalforestwatch.org)

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