Guardian Platforms

By Rainforest Connection

Introduction

Old tech meets new tech to save the forest

In many of the world's rainforests, illegal logging and poaching are common issues that governments, conversation groups and concerned locals have struggled to stop. This is often due to the fact that there isn't a consistent presence in the dense rainforest that can hear, see, and respond to the illegal actions, meaning that poaching and illegal logging falls through the cracks. 10's of billions of dollars are made through the extraction of illegal lumber. This extraction not only impact the local ecosystems as they clear areas of their tree, damaging wildlife habits in the process it also pulls valuable trees from some of the most productive forests that sequestered the carbon leading to am increased carbon output. The impacts of logging can be felt long term and great impact a communities ability to thrive. In legal logging there are plans to navigate the reforesting process, and limitation put in place to avoid this long term impact. However, it's likely that they illegal logging are going to go through such limitation and pricey reclamation on the cleared area without being held accountable. On top of impact to the natural environment the illegal nature of the extraction can also lead to social, political and community based issues issues.

So what is the solution?

Topher White, the founder of Rainforest Connection, thought of a solution while visiting Borneo In 2011. While Topher was volunteering at Gibbon reserve he meet three guards whos job it was to prevent illegally logging the reserves, it was a constant battle and heavy relied on these guards patrolling the park and reporting any illegal logging. Using his experience and knowledge with technology, he aimed to build a tool that would help guards locate and react quickly, to catch the loggers and hold them accountable.

Due to the density of the rainforest, tools like cameras would be limited and largely ineffective. Yet using what nature already uses in these dense forests could work, and that is sounds. He explained it as a type of biomimicry, basing the technology on what the animals in these areas know works best for communication. Sounds travels far and can be easily recorded and relayed using recording devices.

Using old phones he worked on building this tool that would listen to the forest, pick up the sounds of chainsaws and send alerts to the people like those guards that he meet in Borneo. The Rainforest connection system, RFCS platform, is the tool and system that he developed. Using old cell phones, they make the RFCX Guardian. These Guardians are water poof case with an old upcycled cell phone connected to batteries that are powered by a solar array that sits on top of the waterproof case, to keep the phone charged, and a powered external microphone to pick up the sounds of the forest. Using the solar power these units can last for years.

How do you get the sounds from the unit to the people who can react to them?

This is requires an external antennas on the guardian units that can connect to cell phone services from even miles away. After capturing the sounds of the forest, the data is sent though a cloud based platform, like google drive, and the real time information data can then be processed. Using an AI model, it can filter the recordings to pick out chainsaws, gunshots, or any other sounds that someone is looking for, and send an alert through the RFCX Rander app to those who can then respond to the alert like rangers, patrol or law enforcement. This also for responses that would stop actions like illegal logging and poaching as they are happening.

The phones that he is using are from 2008 and 2009, have the software that is needed to perform to act as a Guardian, these include GPS, Accelerometer, Sound recording, internet connectivity, and audio compression. This diverts this technology from the waste, saving resources while saving the forest.

It's not just logging!

With the goal of having a global network of gaudains, and allowing access to the recordings, it could be used by scientists, bird watchers, and students to have access to the sounds of the forest. This data can help study animals and gain a better understanding our the natural world by listening in to the sounds it makes.

Learn more by checking would the links below:

[Rainforest Connection- Rainforest Bioacoustics: Using sound technology to detect Illegal logging](#)

How old Cell phones are protecting the rainforest - https://www.youtube.com/watch?v=rE-TfhurNQk