

CON101 ASSIGNMENT#1

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SATELLITE USAGE TO TRACK DEFORESTATION

Deforestation is the cutting down of trees in forests on a very large scale for urban use. The most affected forests which face Deforestation are tropical forests. Currently, almost 31 percent of Earth's land surface is covered with forests. This is one-third less than the forest cover before agriculture began to expand, and more than half of that has occurred in the past 100 years. Every year almost 15 million to 18 million hectares of forest land is cut down, which averages to around Two thousand four hundred trees every minute. This removal of trees without any proper reforestation measures has caused environmental damage, loss of biodiversity, and also caused aridity / lower rainfall. This has also caused the extinction of many species, a lot of effect to the climatic conditions like desertification of areas. Not just Deforestation has also caused changes in the carbon dioxide levels in the atmosphere, which has resulted in severe global warming, which is now pushing the polar ice caps to melt and increase the mean sea level.

To keep track of Deforestation to prevent excessive damage to the environment, governments resort to several means, one of which is satellite imaging. With so many satellites imagery and software for analysis becoming available quickly, every small forest organization can now use remote sensing technology to monitor the usage of land and protect the forests. When the computer software used detects a change in the landscape from where trees have disappeared from a particular spot since the satellite had seen it before, it will issue an alert, and a color-coded location will appear on the map from where the trees have disappeared. These satellites visit all the places on Earth once a week. By doing this, if we come to know about Deforestation as soon as it is happening, we can prevent it from happening further.

But this system has one big problem, which is that, whenever it is raining, or there is a cloud cover, the regular sensors can no longer see the forests, and in the tropical forests, there is a lot of rain all the time, which means we do not come to know about Deforestation until weeks or sometimes even months later before the weather has cleared out. Sometimes the loggers and the ranchers take advantage of this fact and clear down forests during the rainy season. Also, these systems are a bit slow to give out information. The data which they use at its highest resolution produces pixels covering a landmass of 250 m on either side, which is almost equal to 10 football fields. This is a massive spot to spot minor changes. Also, it can't detect damages from events that leave the forest canopy the same, such as selective cutting down and logging and wood for fuel.

These are some of the few problems faced in using satellite imagery to track down deforestation by using softwares. Even despite all these issues, satellite imagery is of great help in preventing excessive deforestation and prevent climate changes in the longer run.