

# Falling Forests: Tracking Deforestation Globally from Satellite Data

Deforestation is a major problem around the world. About 25 thousand square miles of forests are lost every year, the majority of these being rainforests. Forest can be cleared for agriculture, new urban areas, or for tree products. However, in remote countries it can be difficult to track how our forests are changing. It is important to monitor deforestation to educate policy makers and the public. This project tracks deforestation globally by first calculating ndvi (normalized difference vegetation index) and ndwi (normalized difference water index) for every year and pixel of MODIS satellite imagery. These curves have different properties for different land types. For example, Evergreen forests have continuously high ndvi values, while crops go through a seasonal cycle. Using ground truth data from cropscape, a machine learning algorithm learned what features correlated with the ground types. Next, pixels without ground truth data, such as pixels in other countries, could be classified for every year. Therefore, it can be calculated where and when forests are disappearing, and for what cause.