

# The Choice: Doomsday or Arbor Day

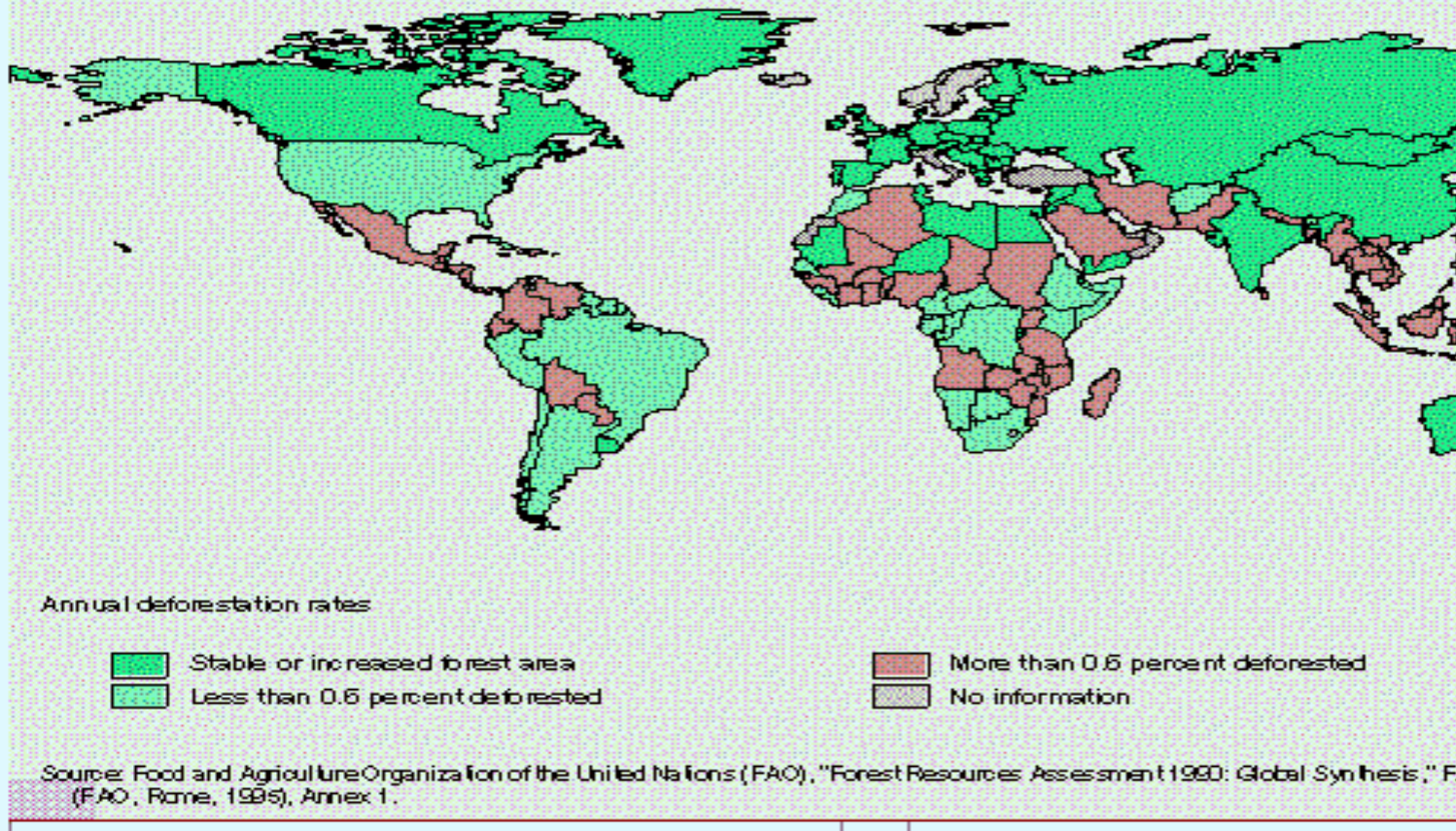
## **Introduction**

Environmental issues effect every life on this planet from the smallest parasite to the human race. The reason for this is simple. A single disruption in the Earth's delicate balance can mean certain destruction of the very place that cradles the lives of many species. What is not so simple is finding alternatives to the now dangerous and confronting acts of planet degradation that have been afflicted on the planet over recent years. One such issue that requires consideration is deforestation. Trees have been or are being cut down at increasingly high rates. If this is not stopped many unfavorable side effects could result.

## **Why Trees Matter**

To understand why deforestation is such a pressing and urgent issue, forests must first be given credit for what they bring to global ecosystems and the quality of life that all species maintain. Tropical Rainforests presently give a place to call home for 50% - 90% of all organisms, 90% of our relatives, the primates, and 50 million creatures that can live no place but the rich rainforests (World Rainforest Movement 16). Not only are other species at risk, but the human race also benefits from what the trees give. From something as minor as the spices that indulge food to life giving medicines, the rainforests amplify and save lives. According to the World Rainforest Movement, 25% of medicines come from the forests (28). This is a number that does not do justice to all the cures that have yet to be discovered or that have been destroyed. The forests give life, not only to other species, but they help to prolong the human race. The forests have global implications not just on life but on the quality of it. Trees improve the quality of the air that species breath by trapping carbon and other particles produced by pollution. Trees determine rainfall and replenish the atmosphere. As more water gets put back in the atmosphere, clouds form and provide another way to block out the sun's heat. Trees are what cool and regulates the earth's climate in conjunction with other such valuable services as preventing erosion, landslides, and making the most infertile soil rich with life. Mother earth has given much responsibility to trees.

Figure 9.3 Estimated Annual Deforestation Rates, by Country, 1980–90



This map shows where deforestation is at its peak in the world with so much focus on the Amazon Region it is also best to know that some places in Europe, Asia, and Mexico also contribute.

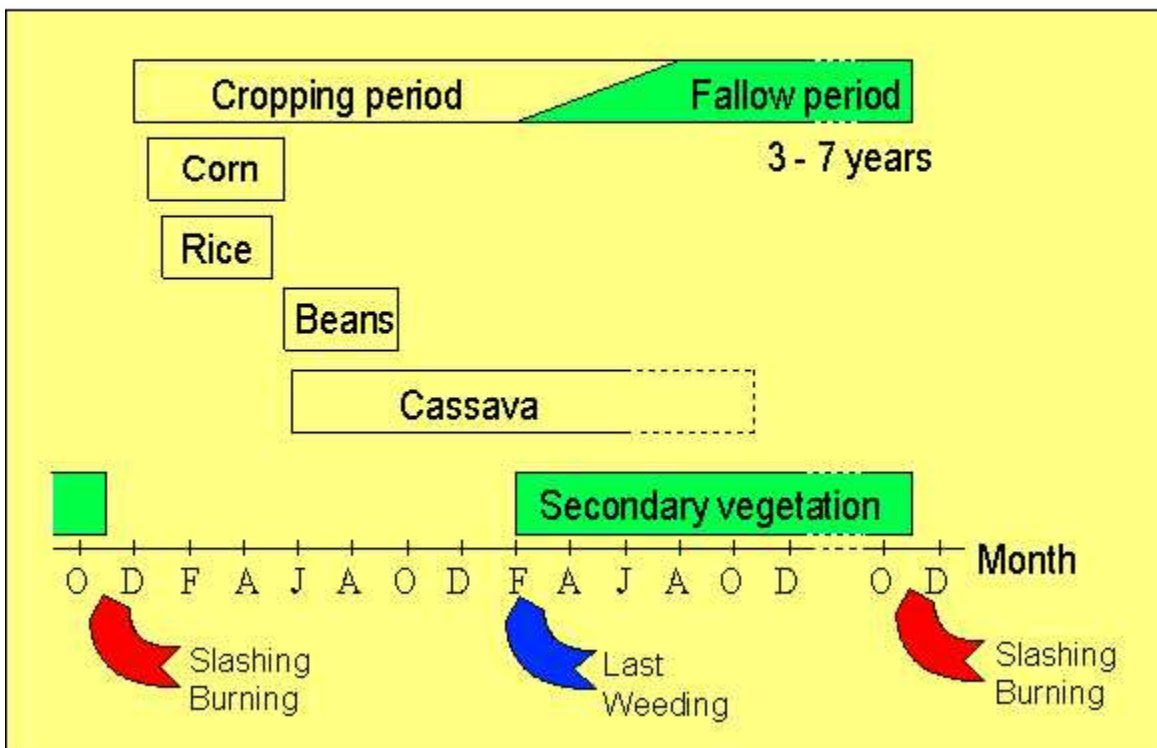
## Population Growth and Deforestation

So this leads into a very confusing question of the 20th century. Why are these trees being torn down? The World Wide Forest Report found that when the Roman Empire was in control of Europe 90% of the continent was forested. Today 500,000 hectares vanish in a single week ("Logging is the Major Cause of Global Deforestation" 1). There is no one easy answer as there are many causes at the root of deforestation. One is overpopulation in cities and developing countries. Population is continually growing in the third world. Some had land until increases in population forced them off it and they became landless peasants that are forced to look for land in the untouched forests. This movement to the forests is in some ways a result of government pressures. In place of implementing programs to help the poor these governments concentrate on the cheapest, easiest, way to keep poverty out of sight and give the poor no other choice but to force other species out and themselves in. According to Norman Myers, bad land tenure, a shortage of modern agricultural tools, and government neglect of subsistence farmers have put an influx of human interference in the forests. (37) The poor are pushed in further and further and destroy more every time they must move on.

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What the poor do in the forests is the most devastating. In attempts to settle farmland, the poor become "shifted cultivators" and resort to using slash and burn methods of tree removal. Slashing and burning involves what its name implies, trees are cut down and the remains are burned. The ash is used as a fertilizer and the land is then used for farming or cattle grazing, however, the soil that is cleared in slash and burn is left infertile, the nutrients in the soil are quickly absorbed by surrounding organisms ("Deforestation" 1). The farmers must move on sometimes to other areas and repeat this process and worthy land and trees become scarce. For farmers in places like Brazil, slash and burn methods are the only way to effectively clear land of parasites and unwanted organisms; chemical means contaminate water and soil and farmers continue to turn to slashing and burning ("Slash and Burn Agriculture" 1). It has become so much a dilemma that a leading researcher, Myers, sees it of all the causes of deforestation, to be the number one cause (Myers 32).

### Example of a Land-Use Cycle of Subsistence Agriculture in the North-East of the State of Pará



This is a specific example of how population growth and slash and burn agriculture is a terrible cycle that will destroy the forest.

### Logging and Deforestation

The small farmer plays a big role, but it is modern industry that too cuts down the trees. The logging industry is fueled by the need for disposable products. 11 million acres a year are cut for commercial and property industries (Entity Mission 1). Peter Heller found that McDonald's needs 800 square miles of trees to make the amount of paper they need for a year's supply of packaging, Entity Mission found that British Columbia manufactures 7, 500,000 pairs of

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chopsticks a day, and the demand for fuel wood is so high that predictions say that there will be a shortage by the year 2000. Logging does too have its repercussions. The logging industry not only tries to accomplish all this but it even indirectly helps the "shifted cultivators" and others to do more damage. The roads that the loggers build to access the forests and generate hydroelectric power create an easy way for many people to try to manipulate the forest resources. The amount of damage that this adds to the forests can not be measured nor can that of the illegal logging. Some importers may even be buying illegally logged wood and not even have known it ("Logging is the Major Cause of Global Deforestation ♦ New WWF Report" 2).

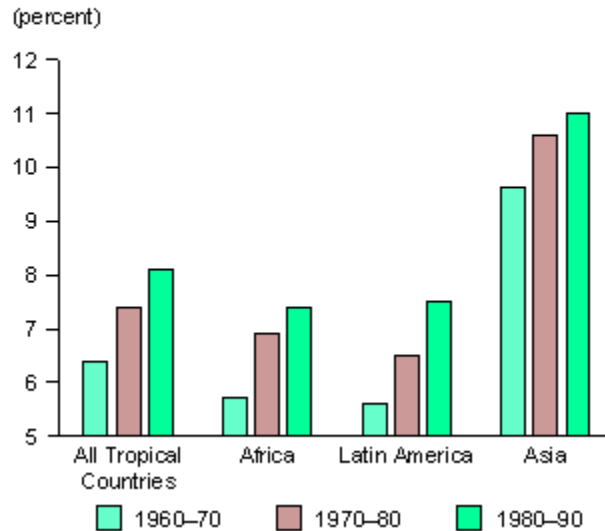
## **Cattle Grazing and Deforestation**

Another of the more devastating forces behind deforestation is cattle grazing. With the international growth of fast food chains this seems to be an evident factor in the clearing of trees today. Large corporations looking to buy beef for hamburger and even pet food seek cheap prices and are finding them with the growth of cattle grazing (Heller 3). In the Amazon region of South America alone there are 100,000 beef ranchers (Heller 3). As the burger giants of industrialized society are making high demands for more beef, more forests are being torn down. Statistics from less than a decade ago, 1989, indicate that 15,000 km squared of forests are used expressly for the purpose of cattle grazing (Myers 32). Once the trees are gone the land is often overgrazed. In some places the government wants this to happen. Cattle grazing is big profit that can't be turned down.

## **Other Causes**

Beyond the major causes of deforestation lie some supplementary ones that too stack the odds against forests around the globe. Acid rain and the building of dams have their share of harmful effects. The race to produce cash crops such as fruit, spices, sugar tobacco, soap, rubber, paper, and cloth has given cause to many to try to farm them by using soil and other products that can be retrieved by destroying the forests. Even those in industrialized countries may participate in the destruction of forests in the 3rd world. The need for products in industrialized countries drives production in other poorer, less developed countries. This production is at the cost of the trees and the services that they provide.

Figure 9.4 Estimated Rate of Tropical Deforestation, 1960–90



In addition to deforestation around the globe, the most significant source of forest around the world is disappearing in every country where they are located.

## The Effects

Deforestation presents multiple societal and environmental problems. The immediate and long-term consequences of global deforestation are almost certain to jeopardize life on Earth, as we know it. Some of these consequences include: loss of biodiversity; the destruction of forest-based societies; and climatic disruption.

## What is Lost

Deforestation is causing a loss of biological diversity on an unprecedented scale. Although tropical forests cover only six percent of Earth's land surface, they happen to contain between 70% and 90% of all of the world's species (Myers, 12). As a result of deforestation, we are losing between 50 and 100 animal and plant species each day (Myers 12). Inevitably, the loss of species entails a loss of genetic resources. Many of these species now facing the possibility of extinction are of enormous potential to humans in many areas; especially medicine. As of 1991, over 25% of the world's pharmaceutical products were derived from tropical plants (Myers). By contributing to the extinction of multiple species of plants and animals, we might be destroying the cures for many of the diseases that plague the human race today.

The world's forests, particularly tropical rainforests, are home to over 10 million members of the "last surviving intimately resource-based cultures" (GFF 3). Given the importance of forest products to the daily lives of forest peoples, the destruction of tropical forests entails the destruction of tribal populations as a whole. Aboriginal people world-wide have had their land literally stolen from them by governments and industries, whose intent is to turn "natural capital into hard currency" (Dudley 11). As the Global Futures Foundation states, "there have been more extinctions of tribal peoples in this century than any other. Even in the rare cases when forest

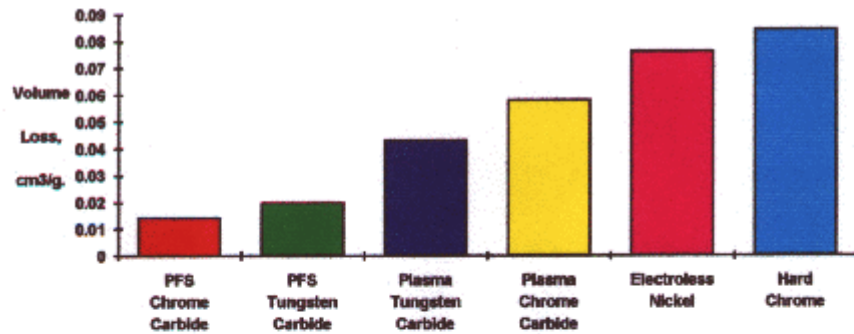
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dwellers are compensated for this loss, the changes visited upon their cultures by the inexorable expansion of industrial culture are devastating." Without a doubt, deforestation has had a profound effect on cultural diversity throughout the forest regions, and ultimately, the world.

## **Erosion**

The lushness of the world's tropical forests is somewhat deceptive. Although these forests assume to be lush and full, the underlying soils are very poor, almost all the nutrients being bound up in the vegetation. The problem is that once forests have been cut down, essential nutrients are washed out of the soil all-together. This leads to soil erosion. As of now, about 80% of the soils in the humid tropics are acidic and infertile (Dudley 21). When there are no trees to keep the soil in place, the soil becomes ripe for erosion. It dries and cracks under the sun's heat. Once the soil temperature exceeds 25 degrees centigrade, volatile nutrient ingredients like nitrogen can be lost, further reducing the fertility of the remaining soil (Myers 14). Furthermore, rainfall washes remaining nutrients into rivers. This means that replanting trees will not necessarily help to solve the problems of deforestation; by the time the trees have matured, the soil might be completely stripped of essential nutrients. Eventually, cultivation in the forest regions will be impossible, and the land will be useless. The soil erosion will lead to permanent impoverishment of huge land areas.

The social impact of soil erosion can be quite severe. Those who settle into the forest regions are forced to move every year or so due to soil erosion. They find areas where they can cultivate. When those areas are no longer good for growing, they move to another region.



Erosion washes away valuable minerals. This process could be controlled if the rate of deforestation is reduced.

## Flooding

Flooding is a quite serious consequence of deforestation. Clearing the forest dramatically increases the surface run-off from rainfall, mainly because a greater proportion of the rain reaches the ground due to a lack of vegetation which would suck up the excess rainfall. "Tropical forests can receive as much rain in an hour as London would expect in a wet month, and a single storm has been measured as removing 185 tonnes of topsoil per hectare" (Dudley 21). In tropical regions where the forests are dense, flooding is not as serious a problem because there is vegetation to absorb the rainfall. It is in areas where there is little vegetation that there is a problem. Hence, to avoid the disastrous effects of flooding, tropical forests need to remain dense and lush.

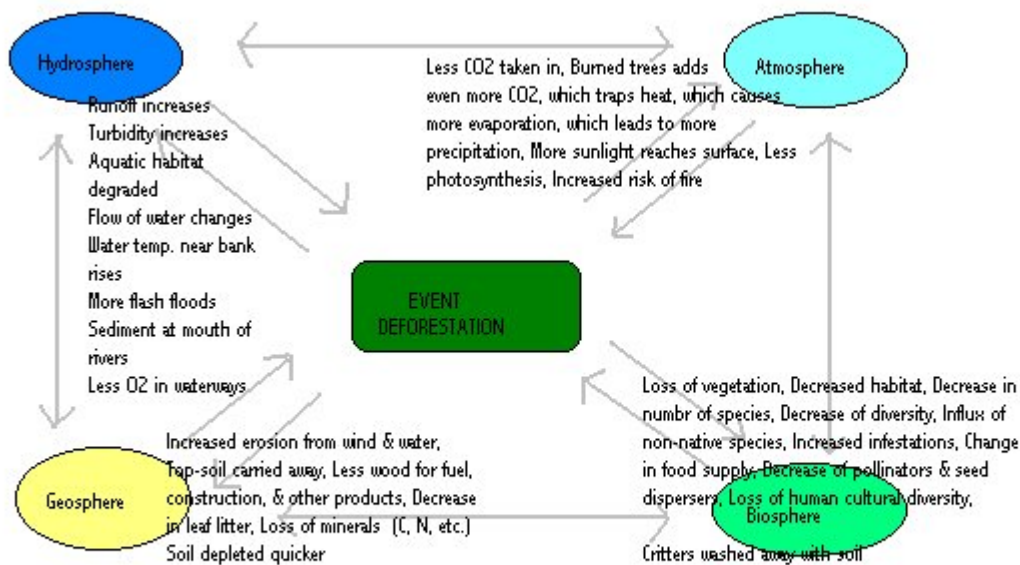
## Climate Change

Although all consequences of deforestation are potentially serious, perhaps the most serious consequence is that of climate change due to the loss of trees. Earth has an atmosphere which contains a variety of gases, all in a delicate balance, to ensure life on Earth. One of these gases in Earth's atmosphere is carbon dioxide; a gas which helps moderate heat loss to outer space.

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Insulating gases such as carbon dioxide are called "greenhouse gasses because their function is much like that of the glass in a greenhouse: they allow solar heat into the system, but discourage its escape" (GFF 3). Other greenhouse gases include methane, chlorofluorocarbons, nitrous oxide, and ozone. If there are additional greenhouse gases, there will be a gradual increase in temperature on Earth's surface. This could lead to changes in weather patterns, sea levels, and other cycles in nature that directly affect life on Earth (GFF 3).

The process of greenhouse gas increase is quite simple. Carbon dioxide levels increase for a number of reasons; but one of the main factors contributing to the increase of carbon levels is decay of woody material. The only way to help moderate the levels of carbon dioxide in the atmosphere is through plant life. Alive plants and trees absorb the carbon dioxide from decaying plants and trees. With a decrease in trees and plant life (due to deforestation) it is much harder to moderate these levels. Ultimately, the amount of carbon will increase due to a lack of plant life present to keep the carbon dioxide levels in check. This whole process leads to an "albedo effect which reflects more heat and light back into the atmosphere than would be the case if the sun shone on green trees" (Dudley 23). The bottom line is that the increase in the carbon level and other greenhouse gas levels into the atmosphere leads to an increase in temperature, and eventually a change in climate and weather.



\* Natives leave forests & go to city, more cattle, Lawsuits against "Fast Food" places, Archaeological sites threatened by slash & burn.

The effects of deforestation are widely ranging and can be irreversible if not stopped.

## Discussion

We as human beings may not understand the severity of the possible consequences that deforestation poses. Since deforestation has had no severe effect on us yet, we ignore the problem. Everywhere you go, you see pieces of paper on the ground, people using multiple tissues to wipe their noses, and countless people pulling excessive amounts of brown paper out

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of the paper towel dispensers in lavatories. These are just few of the sources of paper that we use each day, without any thought whatsoever.

What we must realize is that the paper products we use daily could have been a part of a forest which functioned to enrich and hold soil, absorb carbon dioxide, collect and recycle water, release oxygen, and regulate climate. Some companies do plant trees to produce the kinds of the products needed by industry to spare the older forests but many do not. By wasting paper products, we are wasting forests. The simple fact is that the more paper we use, the more forests need to be cut down to serve our paper needs.

Many people might not consider the possible consequences of deforestation serious. They might say, "What if: a few people lose their homes; we experience a little flooding here and there; the temperature rises a little bit; we miss out on a few new medicines; we kill off a few species which we never knew existed in the first place; the soil loses its nutrients." Ignorant people like these do not realize the severity of these consequences.

By destroying people's homes, we are cheating ourselves out of having a more diverse world. Flooding will cause billions upon billions of dollars in repairs; and those repairs will most likely be done by the good old U.S., with our tax dollars. If the temperature rises a bit, this will throw mother nature totally off course. It will affect farming, the tourism industry, travel, sea levels, and much more. If what Myers found is correct and 25% of medicines come from the rain forests, then there is a big change that with modern technologies that many more could be found. Without knowing what is being destroyed, we might not be missing out on just a few new medicines. We might be killing our chances of finding the cures for diseases such as Cancer, Aids, Multiple Sclerosis, or a multitude of others. And if by chance we lose all of the nutrients in the soil because of soil erosion, cultivation will be next to impossible. After thinking about these consequences, try convincing anyone that the ramifications of deforestation will not prove to be quite disastrous.

Forests were put on Earth for a reason; they help to maintain a delicate balance between all of nature's elements. By destroying forests through ranching, logging, farming, industrial practice, etc., we are putting this delicate balance in jeopardy.

There is no cure for deforestation. Sure, many people talk of reforestation; however that is just not a true solution. Although replanting the forests that have been destroyed seems like a good idea, it actually does no good. Often times the new trees are not the same species as the originals. Also, by the time the trees grow and mature, the soil has already lost much of the nutrients it once had. Old forests and new forests are not the same and it is the old forest that need to be protected.

The only way to ensure that we will not encounter any of the consequences of deforestation is to stop destroying the forests all together. We would have to stop cutting down all trees, no matter what our needs were. Since this is totally impractical as of now, the only thing we can do is use forest products in moderation. However this idea of moderation needs to be put into practice immediately. We as people should take care of this problem before it gets to the point where we

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can no longer fix it. Instead of putting the problem on the back burner until we can no longer ignore it, how about we remedy it now so it never threatens us to begin with. The sad fact is that once the forests are gone, we won't be able to fix the damage which we have caused.

## **Conclusion**

So where can we go from here? There is no one easy solution as deforestation is caused by many things. One option is decreasing the need for the amount of products that are harvested from the rainforests. If all countries, especially developed ones, enforced programs that used recycling, the need for disposable products would be diminished and the loggers would not have a business. If the demand is cut off, there is no need for the supply. Other solutions involve money. One that could help to alleviate deforestation is providing aide to foreign countries so they give homes to those who are at high risk of becoming "shifted cultivators". The trick is convincing tax payers to reach into their pockets. Another would be to appeal to the American public to settle for higher prices on the cash crops that are imported to this country for cheap prices especially that burger at the local fast food joint. If Americans are willing to pay more, corporations such as those in the fast food industry can stop petitioning other countries to farm the rainforests for the manufacture of the materials they need to make their products.

The immediate effects of deforestation may not yet be felt, but if this generation doesn't feel it the next generation and their children will be the ones to suffer. It is the actions of the human race that can make or break the future of the planet. In the end everyone loses unless a solution can be reached. This is easier said than done but the choices that lie ahead on this matter carry severe consequences that will forever change the way that all things live if they are able to live at all.