

Who is responsible for the destruction of the Amazon rainforest?

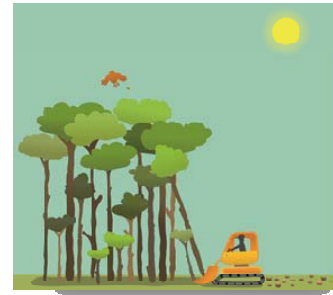
The dictionary defines deforestation as the removal of a forest where the land is then used for a non-forest use.

In recent years, deforestation has become a significant issue with the loss of large areas of the world's rainforests. Rainforests once covered 14% of the earth's land surface; however, they now cover just 6%. It has been calculated that an area of rainforest bigger than the size of a football pitch is destroyed each second and that the world's rainforests could disappear totally within the next 40 years.

There are many reasons for deforestation although it is generally accepted that the main cause of deforestation is agriculture.

Causes

- Agriculture – both subsistence and commercial
- Logging – for the valuable hardwoods and for fuel
- Mining and oil and gas extraction
- Road building
- Settlement
- Dam building



The Amazon represents over half of the planet's remaining rainforests, and it comprises the largest and most species-rich area of tropical rainforest in the world. The majority of the Amazon rainforest is contained within Brazil. Unfortunately, deforestation rates in the past have also been very high in the country and more than 600,000 square kilometres of Amazon rainforest have been destroyed since 1970. The rate of deforestation in Brazil has now slowed, and in 2011 deforestation figures were the slowest on record.



Amazon rainforest deforestation
© 2007 Mark Zimmerman
<http://www.flickr.com/photos/16725630@N00/1524189000>

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| | |
|---|---|
| Rain washes the soil away | Land along a road in the rainforest is easy to reach |
| The Brazilian government wants to build more schools and hospitals | It rains nearly every day |
| The fast food chain wants to keep the cost of its chicken as low as possible | Julie loves going to the fast food restaurant because it's cheap and tasty food |
| The fast food chain earned \$15 billion in 2011 | After a few years, a new area of rainforest is cleared |
| After a few years without trees, rainforest soil quickly becomes infertile | The rainforest leaves fall to the forest floor |
| Deforestation is occurring in large areas of rainforest | Logging roads are built in the rainforest |
| Soy beans can be grown on land cleared of rainforest | The leaves decompose and become the nutrients for the trees |
| Some farmers move to the Amazon region to find work or start their own small farm | Trees cannot grow on infertile soil |
| Tree roots protect the soil and stop it from being washed away | Agricultural companies pay the Brazilian government for land used in the rainforest |
| Some chicken feed is made from soy beans | Greenhouses gases trap heat in the atmosphere and cause global warming |
| Unemployment rate for people 15 – 24 years old is high at 17% | In North East Brazil, 20% of adults cannot read |
| Around 100 plant and animal species are lost every day due to deforestation | Rainforests absorb CO ₂ which is a greenhouse gas |
| Rainforest plants can be used to make new medicines like aspirin for people | Soy beans are cheap to buy |

Student tasks

1. Working in pairs, read the cards to each other – ask your teacher if there are words you do not understand.
2. Classify the cards.
3. Try to make links between the statements on the cards to show connections between the cards.
4. Create a mind map to show the connections and issues involved.
5. Describe what you can see in the satellite image of the rainforest in an area of Bolivia below.



The Tierras Baja project in Bolivia

Landsat image courtesy USGS EROS Data Center and Landsat7 science team.
<http://earthobservatory.nasa.gov/IOTD/view.php?id=1053>

6. Who is responsible for the destruction of the rainforest? Explain your ideas in as much detail as you can.

Teaching notes

A suggested lesson plan:

1. Students read the cards to each other – at this point the teacher can check for any vocabulary issues.
2. Students classify the cards. They can choose their own groups for classification at first and then could use the following suggestions:
 - human and physical
 - natural, social, economic and political factors.
3. Students make links between statements in the cards to form a chain showing how things are linked together.
4. Students create a large mind map to show the connections and issues involved. This could be a class activity using a Smartboard.
5. The image is from Landsat7, acquired in 2000. It shows deforestation in Bolivia for both agriculture and settlement. At the centre of each of the pie or radial patterned fields is a small community including a church, bar/cafe, school, and football pitch. The webpage <http://earthobservatory.nasa.gov/IOTD/view.php?id=1053> has a further image and a more detailed description of the image. The rectilinear, light-coloured areas to the right are fields of soybeans cultivated for export. The dark strips running through these fields are windbreaks.



Photograph courtesy Compton Tucker, NASA GSFC.
<http://earthobservatory.nasa.gov/IOTD/view.php?id=1053>

6. Students write an essay where they have to answer the question – who is responsible for the deforestation of the rainforest? This question could be differentiated by asking the question 'Is the fast food chain responsible for the destruction of the rainforest?'

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Possible links

Some examples of linked statements are given below:

1. The fast food chain wants cheap feed for its chicken

so

it uses rainforest land to grow soy beans

because

it can buy lots of land cheaply from the Brazilian government.

2. Logging roads are built in the rainforest

which means

the land along a road in the rainforest is easy to reach

so

some farmers move onto the cleared land to start their own small farm.

and

provide work for the many unemployed people in Brazil

These links can then be developed into short paragraphs e.g.

After the forest is cleared, the land becomes infertile due to lack of leaves for nutrient recycling. The soil is washed away and large areas do not recover. The rainforest is important on a global scale to control our climate and provide biological diversity for discovery of medicines.

Possible discussion questions

- It is right for people in wealthy countries to demand that people in poor countries do not develop the rainforest?
- Is the fast food chain to blame for buying cheap chicken food?
- Is the consumer really to blame?
- How can deforestation be controlled or managed?

Additional material

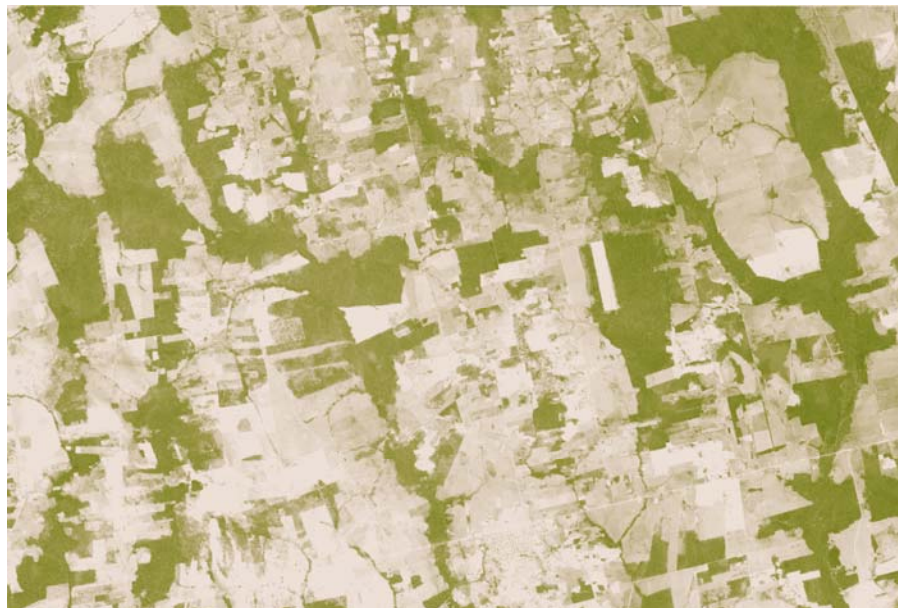
- This is a mystery activity based on the thinking skills activities from *Thinking through Geography* by David Leat. <http://www.geoworld.co.uk/>
- Greenpeace. <http://www.greenpeace.org/usa/en/>
- Monabay. <http://kids.mongabay.com/>

The NASA images below are particularly useful in showing the initial linear and subsequent large-scale deforestation.

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Deforestation in Rondonia, Brazil 2000
Courtesy of NASA maps (Robert Simmon), based on ASTER data.
<http://visibleearth.nasa.gov/view.php?id=7548>



Deforestation in Rondonia, Brazil 2006
Courtesy of NASA maps (Robert Simmon), based on ASTER data.
<http://visibleearth.nasa.gov/view.php?id=7548>