

Tropical Deforestation

Lesson Map: <https://esriurl.com/enviroGeoInquiry6mv>

Engage

What is deforestation?

- Click the map URL above to open the map.
- ? Where is this odd landscape? What are all the squares and rectangles? *[Brazil: patches of fragmented forest and areas of deforestation.]*
- Click the left yellow marker to display a pop-up. Click the image in the pop-up.
- ? Describe the image that you see. What do the colours represent? *[Forest change over time: the light colour means little change, while red signifies severe damage.]*
- ? What is the relationship between the original green image and the red image? *[Areas where the brown patches are present are the same as the red areas.]*

Download student worksheet [here](#).

Time
30 minutes

Activity

Explore deforestation trends and patterns.

Learning Outcome

Students will be able to:

- Identify and describe the locations most affected by deforestation.

ACARA Curriculum Link

Year 7 Science: Biological Sciences

[ACSSU112](#)

Unit 3 Senior Curriculum: Land cover transformations

[ACHGE065](#) | [ACHGE072](#)

Teacher Feedback:

To share your feedback on this, or any Spatial Activity, please contact education@esriaustralia.com.au

Explore

How has tropical forest cover changed over time?

- Click **Layers** on the dark toolbar.
- Turn on the layer Forest Loss (World Land Cover) by clicking its eye icon in the **Layers** pane.
- Describe the general patterns you observe.
- ? What generalization can be made about forest losses by year, dating from 2001 to 2014? *[Deforestation seems to have slowed in since 2010, with most taking place in the early 2000's]*

Explain

What are some causes and effects of deforestation?

- ? What are some possible causes of deforestation? *[Population growth, logging/lumber, agriculture, and ranching]*
- ? What are some possible effects of deforestation? *[Social conflict, loss of habitat and biodiversity, release of CO2, and excess erosion.]*
- ? Using the evidence provided from the map layer, what is a possible outcome — positive or negative — of increased deforestation?? *[Answers will vary]*

Elaborate

Where is deforestation most severe today?

- Turn on and off the layers **Rondonia Brazil Satellite Image 2000, 2004, and 2008**.
- Record notes of the patterns that you observe from the satellite images over time.
- ? What are some possible causes of these patterns? *[Construction of roads and transportation access]*
- ? What are some possible methods of deforestation? What evidence can you gather from the satellite images? *[burning, clear cutting.]*
- ? How much land has been consumed by deforestation? Using the 2008 Rondonia image, measure a rough estimate of the deforested area. *[Answers will vary, ~130,000 sq. km.]*

Evaluate

Why should we care about the loss of tropical forests?

- ? What are some ecological advantages provided by established tropical forests? *[Increased biodiversity, stabilize soils, a regulated local hydrological cycle, and carbon sink creation]*
- Turn on the layers **Biomes**.
- Describe the locations that you feel demonstrate the greatest number of species over a given region. *[Answers will vary.]*
- Turn on the layers **Biodiversity Hotspots**.

→ Refine the previous answers using information about locations of biodiversity hotspots.

? What are some possible benefits of biodiversity? [*Medicines and other toiletry items, and chemicals for pesticides.*]

Next Steps:

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