

Sustainability and Conservation in the Amazon

Examining Landscape Change Teacher Notes

Explore land use and land cover change at hotspots around the world:

In this activity, [A Bird's Eye View of Changing Landscapes](#), students view landscape change over time and predict potential impacts on biological communities. Using pairs of current and historical satellite images in Google Earth, they explore landscape change in U.S. and international settings. Most of the changes are human-caused, but the images also portray the consequences of natural events such as volcano eruptions. Based on their observations, students predict potential effects on associated plant and animal communities.

Another option is to use HHMI's BiomeViewer interactive website to explore how patterns of human settlement and agriculture have changed the planet since 1700:

<http://www.hhmi.org/biointeractive/biomeviewer>

Use satellite imagery to investigate deforestation in the Amazon:

Explore change over time and the impact of road construction in the state of Rondônia in the Brazilian Amazon. Here are various options for viewing and comparing landscape images:

- UN Environment Program, side-by-side images of Environmental Change Hotspots, 1975 compared with 2001: <https://na.unep.net/atlas/webatlas.php?id=2287>



Rondônia, Brazil
1975



Rondônia, Brazil
2001

- Use the Google Earth app to zoom into these same hotspots and view an overlay of paired images. This makes it possible to slide back and forth through time to see deforestation in action: <https://na.unep.net/atlas/googleEarth.php>

DRAFT FOR REVIEW: Please send feedback or questions to Dr. Nancy Trautmann (nmt2@cornell.edu)

- Another option is to explore data in Global Forest Watch, which offers analysis of tree cover loss between 2001 and 2016. For example, compare Rondônia in the Brazilian Amazon where deforestation has been heavy with the Loreto region in Peru that includes the Maijuna reserve and has seen much less deforestation:
 - Country: Brazil, Jurisdiction: Rondônia
<http://www.globalforestwatch.org/country/BRA/22> (with 3.6 million hectares of tree cover loss)
 - Country: Peru, Jurisdiction: Loreto
<http://www.globalforestwatch.org/country/PER/17> (with 0.5 million hectares of tree cover loss)

Analyze the idea of building a road through the Amazon rainforest:

- This 3-minute video time explains Amazon deforestation after road building:
<https://www.youtube.com/watch?v=oBIA0lqfcN4>.
- In this National Geographic lesson, students analyze the idea of building a road through the Amazon rainforest – exploring the geographical, cultural, and environmental context, identifying the stakeholders and their role and impact, and mapping intended and unintended consequences of their selected option:
<https://www.nationalgeographic.org/lesson/making-decision-about-building-road-amazon/>

Use Google Earth to explore change over time in your home community:

This currently works only in the Google Earth app, not the web version of Google Earth. Here is info on how to turn on historical imagery to view land use change over time:

<https://support.google.com/earth/answer/148094?hl=en>.