

**Lesson seven:** Changes to the natural environment

**Learning intention:** To recognise the ways in which humans alter natural environments

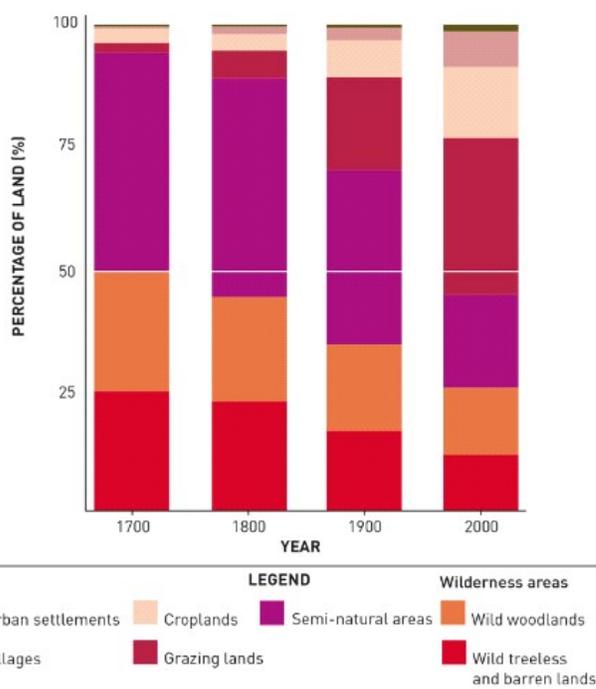
**Success Criteria:**

I can use graphs to identify how landscapes have changes

I can present my findings in a structured paragraph

The last 300 years have seen more extensive change to the Earth’s biomes than in any other period in the earth’s history. Over half of the world’s land area that is considered habitable has now been converted into farmland or housing to provide food, fibre, shelter and fuel to the world’s people – and this area is expanding.

All around the world the natural biomes of forests, grasslands, tundra and even deserts are being converted into farms. In some places, large corporations are converting the land but in most places it is the work of small scale farmers, each motivated by the need to provide food for their own families. The graph below shows the extent of changes to the world’s biomes since 1700.



Source 1.24 Changing land-use patterns worldwide between 1700 and 2000.

**1. Questions: Source 1.24**

1. Describe the changes to the amount of wilderness areas from 1700 to 2000.
2. What type of land use has increased the most? Why do you think this may be?
3. Name three potentially negative impacts that farming can have on the environment.

Below is a diagram of a biome which has been modified for farming in China. The legend demonstrates four categories with the reasons for the changes.

**2. Complete the following activity using the diagram below:**

Select one of the reasons for change from the legend and write a paragraph explaining how and why the landscape has been changed. You can use the scaffold below and work through it as a class, or work independently if you like.

**Scaffold:**

There are many ways in which humans change natural landscapes. One of these includes \_\_\_\_\_.  
This changes the natural landscape by \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.  
This can be seen in the diagram below which demonstrates \_\_\_\_\_.  
Some potential impacts of this could include \_\_\_\_\_.



3. After examining the annotations on the image above, create your own annotations demonstrating the way the landscape has been changed in the diagram on the following page
4. Using a similar scaffold to the one above, independently write a paragraph explaining how and why the landscape has been changed in the diagram on the following page.



**Lesson eight:** Deforestation

**Learning intention:** To understand the causes and consequences of deforestation in the Amazon

**Success Criteria:**

I can identify the causes and consequences of deforestation in Brazil

I can use GIS technologies to identify the consequences of deforestation

1. Watch the clip and answer the question below: <https://www.youtube.com/watch?v=vJnnrpSDWPI>

**Question:** What is deforestation and what are some of the consequences?

2. Watch the following clip and answer the questions.

1. Why did the Brazilian government begin deforesting the Amazon in the 1970s?
2. What were the flow on effects of the building of the trans-Amazonian highway?
3. Which crop became popular in the 90s? What pushed the demand for this?
4. What was the impact of the Soy moratorium and Beef moratorium?
5. What changes did Bolsonaro make which weakened Brazil's environmental policy?
6. How were the 2019 Amazon fires related to deforestation?

3. Go to the following website and complete the activities below:

<https://education.maps.arcgis.com/home/webmap/viewer.html?webmap=da0653f60ebe4ee296ad06937bbabf27>

**Steps:**

- Click on the lesson map link above to commence the lesson.
- Zoom in to view the state of Rondonia in Brazil.

Question

What evidence of deforestation can you see?

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- In the 'details' pane, under the 'content' tab, tick the checkboxes to turn on the 3 layers for Rondonia, Brazil. This shows aerial imagery for 2000, 2004 and 2008.

Question

Investigate the size of the cleared area. How has this changed from 2000 to 2008?

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- You can use the 'measure' tool to determine the area of deforestation in Rondonia in square kilometers, by selecting the 'sq Kilometers' option in the dropdown box.
- Click on the 'bookmarks' icon and view the 'Rondonia, Brazil'. Click the 'note' icon to open a window. Click the image to enlarge it. This shows hotspots of vegetation reduction in Rondonia from 2000 to 2008. The legend is available at the bottom of the window.

What is the pattern of Global biome distribution?

- **Tick the checkbox to turn on the layer 'biomes'. Then, open the legend. Investigate global biome distribution.**

Question

Zoom in to view the general area of land clearing in Rondonia, Brazil. What biome does this region sit within?

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- **Zoom out for a global view. Click on the area of light green tropical rainforest that you have just investigated in Brazil. This will highlight the global distribution of all tropical rainforests**

Questions

Globally, where are tropical rainforests located?

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What does this suggest about the environmental conditions required to sustain tropical rainforests?  
Hint: Turn on the layer titled 'geographic lines' to assist your answer.

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- **Repeat this process to investigate the distribution, and environmental conditions required for deserts, temperate deciduous forests, tundra and boreal forests/taiga.**