

Desertification and agriculture

Lesson Map: <http://esriaustralia.com.au/education/SpatialActivity16>

Engage

What is desertification?

- Click on the Lesson Map URL above to open the map.
- The map shows the severity of land degradation caused by desertification.
- ? What is desertification? *[Process caused by drought, deforestation or harmful agricultural practices which turn fertile land into desert]*

Explore

Is there any correlation between desertification and biomes?

- Click the checkbox to turn on the layer Global Biomes. Compare the distribution of global biomes with desertification.
- ? Canada, Greenland, and Russia experience the lowest severity of desertification. Why? *[They all experience biomes of boreal forest/taiga, or tundra. None of these biomes are suited to agriculture, nor do they experience drought or deforestation. Therefore, there is minimal chance of desertification occurring.]*

Explain

How does agriculture impact desertification?

- Compare the layers Desertification – Severity, and Cropland Area for the year 2000.
- ? Globally, what is the relationship between severe desertification and cropland area? *[High cropland areas experience severe desertification]*
- ? Why does this relationship exist? *[Desertification in these places would be caused by deforestation for agricultural land, or harmful agricultural practices]*

Download student worksheet [here](#).

Time
15 minutes

Activity

Investigate the cause of desertification, and the relationship between agriculture, biomes and desertification across the globe.

Learning Outcome

Students will be able to:

- Understand the cause of desertification
- Understand the relationship between desertification and agriculture

ACARA Curriculum Link

[Year 8 Geography – Unit 1: Landforms and landscapes](#)

[ACHGK051](#) | [ACHGS057](#) | [ACHGS058](#)

[Year 10 Geography – Unit 1: Biomes and food security](#)

[ACHGK060](#) | [ACHGK061](#) | [ACHGK063](#)
[ACHGS065](#) | [ACHGS066](#)

[Senior secondary Curriculum – Geography. Unit 3: Land cover transformations](#)

[ACHGE065](#) | [ACHGE067](#) | [ACHGE071](#)
[ACHGE072](#) | [ACHGE073](#) |
[ACHGE074](#) | [ACHGE075](#) | [ACHGE076](#)
[ACHGE077](#) | [ACHGE079](#)

Extend

Which biomes best support agricultural land?

- ? Brainstorm the environmental conditions you think would be most advantageous to agricultural land. *[Answers will vary but may include factors such as rainfall, soil composition or temperature]*
- Tick the checkbox to turn on the layer Cropland Area (2000). This shows agricultural land used for crops during that year. You may need to turn off all other data layers to see this clearly.
- Open the bookmark North American Cropland. This shows a significant area of high density cropland.
- ? Which biome covers this area of cropland? *[Temperate grasslands and temperate deciduous forest].*
- Compare the layers Desertification- Land Degradation Severity, and Cropland Area 2000 in this same region in North America.
- ? What is the relationship between these two features? *[More severe desertification occurs in this area of high density cropland].*
- ? Discuss some reasons that desertification might occur in this area of cropland. *[Answers will vary].*

Next Steps:

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Teacher Feedback:

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