

## BIOMES: Place, Space and Change

Activities created by Lorraine Chaffer, Vice President GTA NSW & ACT

**Skill Focus:** Application of knowledge and understanding / Critical thinking

### Outcomes

**GE5-2** explains processes and influences that form and transform places and environments

**GE5-3** analyses the effect of interactions and connections between people, places, and environments

A student worksheet for this activity is in Appendix 1 on the GTA NSW & ACT website with this edition

### A. GRAPH STUDY: The where and why of Earth's biomes

**TASK:** Use your knowledge and understanding about biomes to identify the factors that influence the global location of biomes.

#### Refer to Figure 1

- Describe how biomes change from low to high altitude locations.
- Why is there a change in biomes as altitude increases?
- Name the type of forest biome found closest to the equator (at low latitude).
- What factor is the main cause of the change from forest at the equator to tundra near the ice caps?
- State one key factor that would influence the location of desert and grassland biomes.
- Predict what might happen to the zonation of biomes with climate change.

#### Refer to Figure 2

- Name the biome that can be found where average yearly temperatures reach minus 10°C and annual precipitation is less than 20 cm (200 mm).
- State the climatic conditions that influence the biomes at places A and B.

### B. PHOTO STUDY: People change biomes to produce food

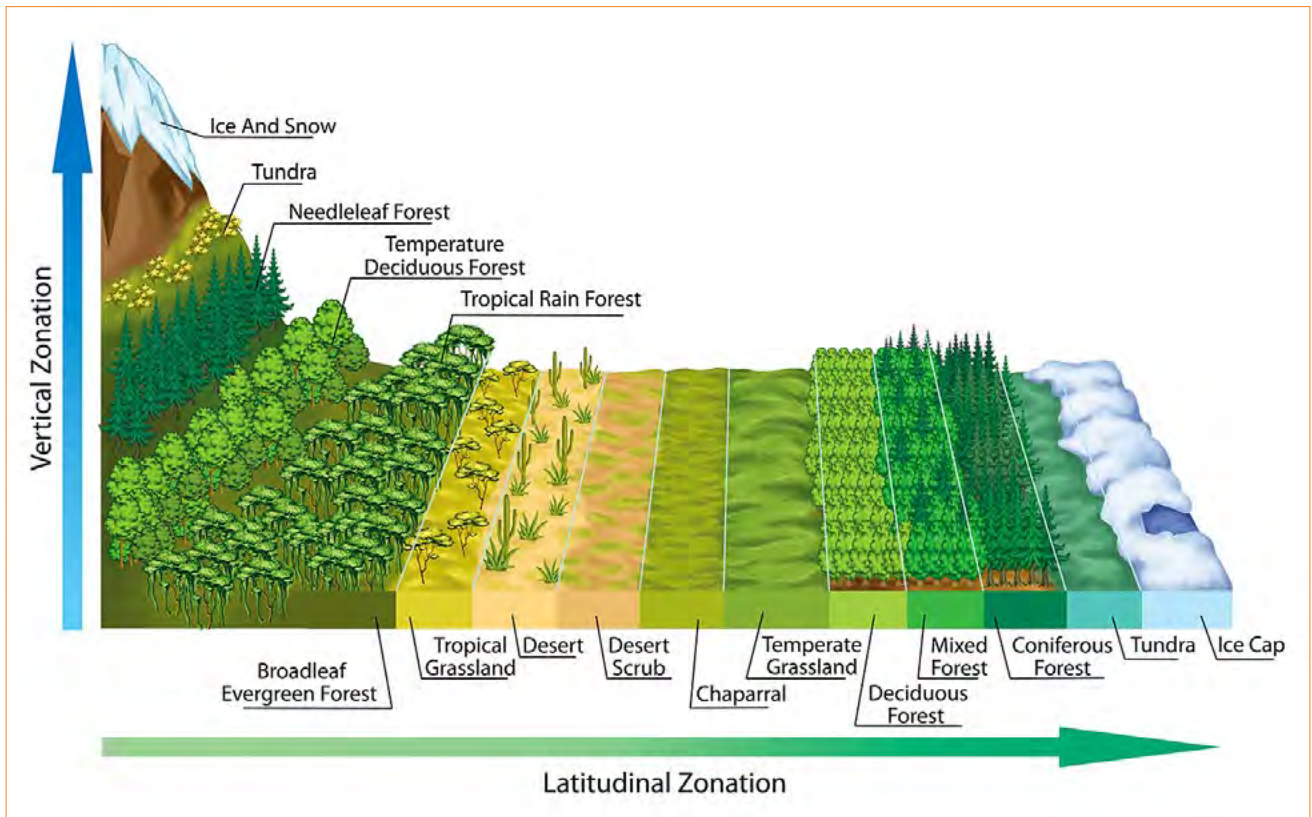
**TASK:** Use your understanding of geographical concepts and biomes to explain how people have changed or created biomes to produce food and analyse the consequences of change.

#### For each photograph set shown in Figures 3 to 5

- Suggest the natural biome that once occupied this location. You may refer to Figure 1 to guide your response. Give a reason for your answer.
- Explain how the biome was changed to produce food. Use geographical concepts.
- Name a country or place you know where a biome has been changed in a similar way.
- Explain possible consequences of the change (positive and negative). Present your ideas in a flow diagram or consequence chart.
- Propose a solution to ONE negative consequence of change.

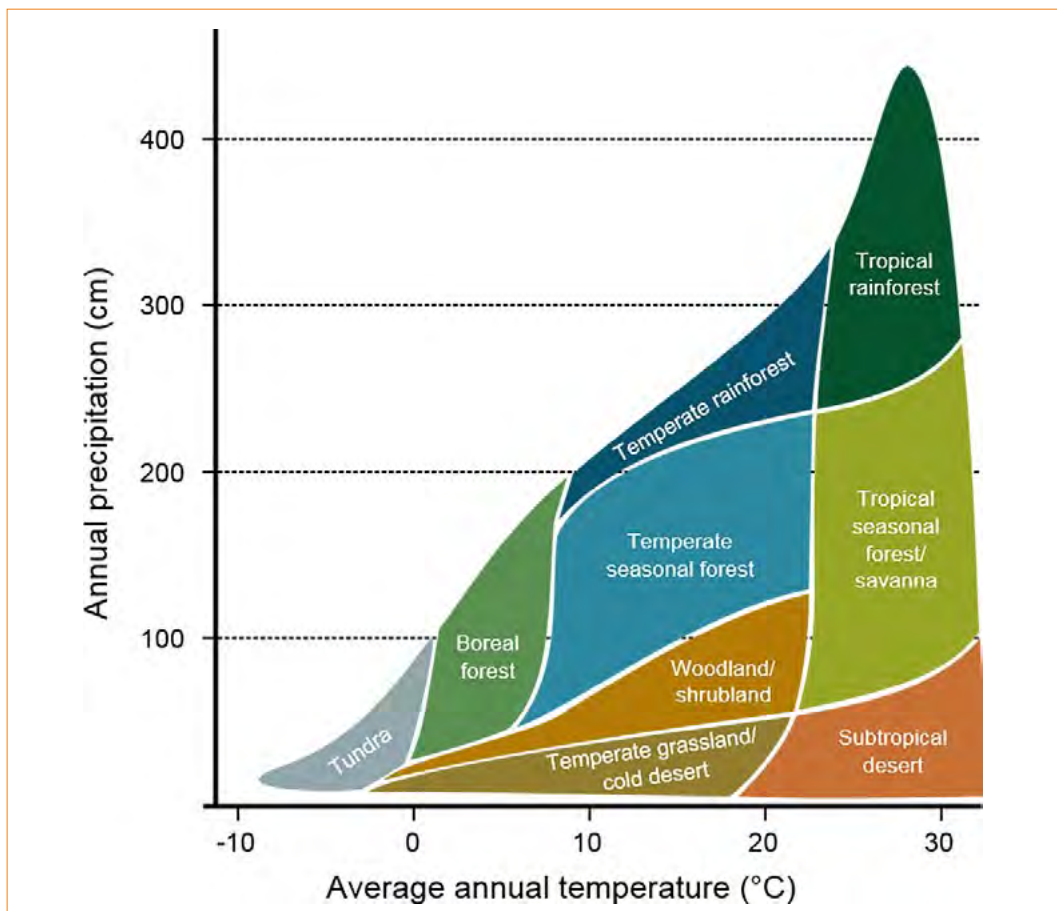
# SUSTAINABLE BIOMES: PLACE, SPACE AND CHANGE

Figure 1



Source: Shutterstock

Figure 2



Source: <https://openoregon.pressbooks.pub/envirobiology/chapter/3-3-terrestrial-biomes/>

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Figure 3



Image source: Shutterstock



Image source: Shutterstock

Figure 4



Image source: Shutterstock



Image source: Shutterstock

Figure 5



Image source: NASA Earth Observatory



Image source: Agrico <https://www.agrico.co.za>

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## C. PHOTO STUDY: The fascinating world of food production

- Complete a **Layers of Inference** template for each photograph.
- Complete a table for each image.
  - **Match** photographs 1 – 5 with the relevant description A – G
  - **Name the country** where you think this photo was taken.
  - **Give reasons** for your answers
  - **Write two questions** you have about the production of this food.
- Choose ONE of these food producing stories as the basis for a **geographical inquiry** using your questions as a starting point.

What does the photograph definitely tell me?
What can I infer from the photograph? What guesses can I make?
What does the photograph not tell me?
What else would I like to find out? What other questions do I need to ask?

PHOTO	DESCRIPTION	COUNTRY
Reason for my choices		
My questions		

<p><b>COUNTRIES</b></p> <p>USA China Kenya India Japan Kiribati Canary Islands</p>	<p><b>A.</b> Chillies are being sundried on a small farm. The chillies are being sorted by hand Chillies are spices used in cooking in most countries around the world.</p>	<p><b>B.</b> Seaweed is grown on nylon ropes staked into shallow sand. The harvest is floated to shore on small rafts and dried for export to be used in a range of food products.</p>	<p><b>C.</b> Wine grapes are being harvested in this volcanic landscape. Pits are used to protect the plants from trade winds and allows them to thrive in the moist inner soil.</p>
<p><b>About the photographer</b> All images and information from award winning photographer <b>George Steinmetz</b> who has a '<i>passion for the unknown</i>' George is a regular contributor to National Geographic and the New York Times. Read more about George and his books on his photographic publications on his website <a href="http://www.georgesteinmetz.com">www.georgesteinmetz.com</a> Learn more about how food is produced in different locations around the world on George's Instagram account <b>Feed the Planet</b>.</p>	<p><b>D.</b> Lettuce seedlings are planted in a rotating hydroponic farm. Seedlings are planted in nutrient rich water in the centre and rotate for a month before reaching the outer edge for harvesting</p>	<p><b>E.</b> Calf hutches at one of the world's largest dairy farms with 39,000 cows. The cows were imported from Australia the semen for artificial insemination comes from Canada and most feed also comes from overseas.</p>	

A worksheet with templates for this activity is in the appendix on the GTANSW & ACT website with this edition.

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Figure 6

