

Environmental Change and Management

Teacher Toolkit Stage 5



OUTCOMES CONTRIBUTED TO:

GE5-2

GE5-3

GE-5-5

GE5-7

GE5-8



Welcome to the Sydney Zoo Teacher Toolkit

Our vision is to secure a sustainable future for wildlife through making connections between your students and our animals.

‘Bringing Nature into a classroom can kindle a fascination and passion for the diversity of life on earth and can motivate a sense of responsibility to safeguard it’.

Sir David Attenborough

What is in this toolkit:

- ✔ Syllabus-linked pre-visit activities
- ✔ Resources for guided and self-guided visits to the Zoo to ensure your students get the most out of their visit
- ✔ Post-visit, syllabus-linked class project
- ✔ Links to provide further information

Resources required to best use this toolkit:

- ✔ Computer and screen or smartboard
- ✔ Internet access
- ✔ Access to playground/outdoors area where possible

Sydney Zoo acknowledges the Darug nation, their people, past, present and their future generations.

Visiting Sydney Zoo

Learn about Flora the orphaned Chimpanzee from Burundi. Explore how our actions in Australia can impact environments around the world and how we can help the survival of this endangered species.

Students will learn about minerals used in mobile phones and how to use resources like MobileMuster to raise awareness and funds for Chimpanzees.

Pre-visit checklist:

- ✔ Pre-visit activities
- ✔ Behaviour expectations of students while visiting Sydney Zoo
 - Students must always be accompanied by a teacher
 - Follow instructions of your teacher and zoo staff
 - Take only photographs and memories, leave only footprints and smiles
 - If you get lost, find a staff member in uniform and tell them you need help
 - Have a lot of fun and ask lots of questions!
- ✔ Ask students to prepare low waste/waste free lunches if possible. We love seeing the students' being low waste/waste free – please brag about this to us
- ✔ Wet-weather preparation if the forecast is not favourable (some of our animals love wet days so don't worry about them hiding away)

Upon arrival::

- ✔ Check in with our wonderful Visitor Experience team
- ✔ Enjoy your visit with us and please ask any staff for assistance if required
- ✔ Students must always be accompanied by a teacher

We recommend allocating small groups to adult supervisors.
Download our 'survival guide for teachers'

What is a low or no waste lunch?

- Sourcing foods that have minimal or no packaging and using reusable containers to carry food.
- Bringing your own reusable drink bottle and refill it.
- Carrying your own reusable cutlery set.



Examples

- ✔ Sandwiches - without clingwrap, they can stay fresh in a suitable reusable container or beeswax reusable wrap.



- ✔ **Fruit** - apples, bananas and mandarins are easy to eat and/or peel at school or the Zoo, the core and skin can go in the organic bins.
- ✔ **Nuts, dried fruit, biscuits, popcorn etc.** in a small reusable container, buy them in bulk to reduce packaging and put servings into small containers for snacks.



Post visit activities

Outcomes	Learning Activity	Resources
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Activity 1:

Chimps – what do we already know?

Brainstorm with the class what they already know and have learned after the trip to Sydney Zoo.

White board,
Computer or paper
– something to
create a
mindmap/list of
knowledge

Activity 2: The basics

Where in the world is Burundi?

Can complete as a class, in groups or individually

Use the worksheet 'Burundi and NSW' to compare the two areas by doing some research.

[Global forest change map](#)

Re-cap how much forest cover has been lost in Burundi. Using the Global forest change map resource – search 'Burundi' and look at the geographical location of Burundi compared to regions of Australia.

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Case study

Students use Chimps of Burundi as an investigative study – comparing Kibira National Park's rainforest to the Blue Mountains National Park in NSW.

Learning intentions:

Students understand that forest loss is occurring and impacting threatened species.

Students understand the processes that are contributing to the forest loss.

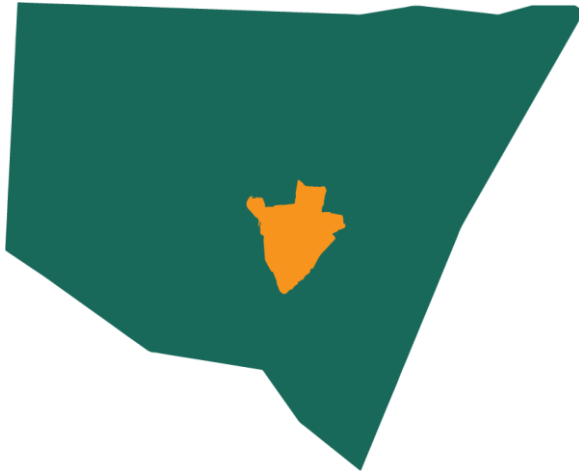
Students understand different management practices in different countries to try and conserve forests.

Use the worksheets and lessons below to contribute to the case study.

At the end of this Case Study – students may like to create an education resource such as a web page, mini documentary or book to help educate primary children here and in Burundi about the plight of Chimpanzees in Burundi and Quolls here in Australia.

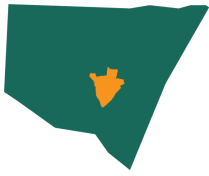
Sydney Zoo are in contact with the zookeepers and other staff in Burundi and would love to share education resources that your students create for Burundi students. Human/wildlife conflict is constant near the national parks in Burundi, helping students learn about their local wildlife and the wildlife of Australia that are also threatened is a great way to open discussions around wildlife conservation.

Burundi and NSW



Burundi is a small nation in central Africa. You can see it here compared to the size of NSW. Create a basic profile comparing the two places. Expand on this on separate pages if you need to.

	NSW	Burundi
Climate/Typical weather		
Habitat type(s)		
Native animals		
How do people use their environment? E.g., agriculture		
Area		



Burundi and NSW

Let's look more closely...

The Blue Mountains National Park to the west of Sydney is home to many of NSW's species and should be home to Eastern Quolls. Eastern Quolls are locally extinct, living only in Tasmania since 1963. Burundi's Chimpanzees are endangered but are at risk of going locally extinct. This case study will compare the two national parks – Kibira National Park in Burundi and The Blue Mountains National Park – using Chimps and Eastern Quolls as a focus.



Using the [Global forest change map](#) – compare the loss of tree cover in both places since the year 2000. Use the different data layers to look at where there is still 100% tree cover and when recent forest loss has occurred.

Create a profile including a map of each area

In your profile include:

- Size and location of the national parks
- Information about the primary environment type
- Significant periods of forest loss
- Causes of forest loss
- Efforts to conserve the national parks and how people are contributing to conservation in each location
- Impact on the loss on your focus species
- Other major threats to Quolls and Chimps



Comparing climates

How do climates compare in Burundi and the Blue Mountains



What does the word climate mean?

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Blue Mountains National Park Climate

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Burundi's Kibira National Park Climate



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Story of the 2019/2020 summer bushfires and the impact on wildlife populations

Content	Learning Activity	Resources
<p>Geography Bushfires Geographic skills</p>	<p>Content warning – awareness of students impacted by fires before starting program</p> <p>Prior knowledge brainstorming Learning intention Activate prior knowledge of bushfires and impacts – drawing on experience in 2019/2020 summer</p> <ul style="list-style-type: none">• What does everyone remember or know about the bushfires?• What impacts did they have?<ul style="list-style-type: none">- on people- on the environment- on wildlife• What role do people play in managing fires?<ul style="list-style-type: none">- stopping them from starting- protecting areas- putting fires out <p>Research the extent of the 2019/2020 fires in context of the Blue Mountains National Park</p> <p>Questions: If we were looking for ideal habitat to release Eastern Quolls back into the wild, would the Blue Mountains be an ideal place? What impacts would the fires have on this decision?</p>	<p>Burnt area map</p> <p>Burnt area SEED map</p>
	<p>Activity: Weather vs Climate - activate prior knowledge What is the weather? What is climate?</p> <p>Climate of Western Sydney Compare the climates of Western Sydney, the Blue Mountains and the East Coast of Sydney.</p> <p>Activity suggestion Set up a weather station at your school</p> <p>The water tower story Using the Google Site links – follow the story of the black summer bushfires and what impacts they had.</p>	<p>Comparing climates worksheet (p11) Blue Mountains website BOM website</p> <p>Rain Guage Activity</p> <p>The Story (google.com)</p>

Climate Change

Content	Learning Activity	Resources
Geography Environmental Change Geographic skills	<p>Learning intention: Activate prior knowledge of what climate change means and why the climate is changing. Investigate the anthropomorphic aspects of climate change and how people can influence the environment.</p> <ul style="list-style-type: none">• How much do you know about climate change? Take the Earth Day climate change quiz. <p>Activity: Watch Cool Australia's climate change video explaining anthropomorphic climate change.</p> <p>Optional – use the NASA Climate Kids website to explore different aspects of Climate Change including the Greenhouse effect, energy, water etc. (This resource is great for younger children, or students finding it hard to understand the concepts)</p>	<p>Climate Council article</p> <p>Earth Day climate change quiz</p> <p>Cool Australia video</p> <p>NASA Climate Kids</p>
	<p>How does Climate Change impact on Chimpanzees and Quolls</p> <p>Students do some research and include in their profile of each place- the impact of Climate Change on each species.</p>	<p>WWF video - Trees are Rainmakers</p> <p>The Impact of Climate Change on Chimpanzees - Jane Goodall : Jane Goodall</p>

Resources

[Interactive World Forest Map & Tree Cover Change Data | GFW \(globalforestwatch.org\)](https://globalforestwatch.org)

[Pan troglodytes \(Chimpanzee\) \(iucnredlist.org\)](https://iucnredlist.org)

[Dasyurus viverrinus \(Eastern Quoll\) \(iucnredlist.org\)](https://iucnredlist.org)

[Return of eastern quolls to the wild on mainland Australia - WWF-Australia | Return of eastern quolls to the wild on mainland Australia | WWF Australia](#)

<https://www.globalnationalparks.com/burundi/kibira/>

[In Burundi, one-time combatants who razed forests now raise seedlings](#)

[Burundi Chimp populations](#)

<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Parks-reserves-and-protected-areas/Fire/factsheet-google-earth-engine-burnt-area-map-200063.pdf>

[Blue Mountains Weather and Climate \(bluemts.com.au\)](https://bluemts.com.au)
[National Geographic article](#)

[Trees are Rainmakers video WWF](#)

[Koala drinking stations can reduce impact of climate change - The University of Sydney](https://www.sydney.edu.au/news-opinion/news/2019/06/06/koala-drinking-stations-can-reduce-impact-of-climate-change.html)

<https://janegoodall.ca/our-stories/climate-change-and-chimpanzees/>

Supporting resource for explaining climate change
[NASA Climate Kids](#)



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