

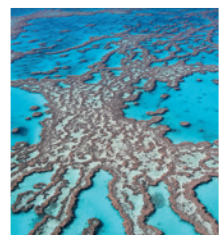


Jane Goodall's  
**roots&shoots**

# Amazing Ecosystems

*A Journey Through Our Planet's Spectacular Ecology*

## Teacher Resources



Jane Goodall Institute  
Australia

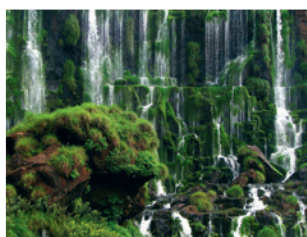


Petaurus  
EDUCATION GROUP





Jane Goodall's  
**roots &  
Shoots**



*All images from Amazing Ecosystems.  
See image credits page 158 for details.*

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The Jane Goodall Institute Australia and Petaurus Education Group acknowledge with deep respect the First Nations of this land we now call Australia.

We recognise their continuing connection to Country, and acknowledge that they never ceded sovereignty. We thank them for caring for our living landscapes since time immemorial.

We acknowledge and respect the continuation of cultural, spiritual and educational practices. We pay our respects to Elders past and present and emerging, and extend that respect to all First Nations people reading this resource.

# About The Roots & Shoots Program

*Congratulations for being a Roots & Shoots school!*

*Roots & Shoots is a global community action program founded by Dr. Jane Goodall in 1991. The program aims to inspire, empower and encourage young people all over the world.*

It shows them how to follow their passions, take actions together and become the change our world needs. That way, we can all ensure a better future for people, animals and the environment.

## About the Resource Box

The Roots & Shoots Resource Box is designed for teachers and students in primary schools, or by homeschoolers. As well as the four stunning books within, the Box offers several exciting learning opportunities and competitions to further foster optimism for our future.

R&S are excited to be partnering with WOODiWILD to increase biodiversity. Woodiwild enables schools to join a national tree planting program – creating habitat and carbon storage - while also raising funds for their own school needs! To learn more about this fantastic initiative visit [woodiwild.org](http://woodiwild.org)

[rootsandshoots.org.au](http://rootsandshoots.org.au)



## This Teacher Resource

This resource aims to more deeply engage teachers and students with the amazing and inspiring content of the 2022 Roots & Shoots Resource Box. Moving beyond simply reading and viewing the beautiful pages of these books, through these learning sequences it is hoped all can feel more purposefully connected to nature and inspired to take action towards a better future .

The Amazing Ecosystems book is authored by experts and is an important teacher professional learning resource. It supports teachers towards achieving Australian Professional Standards for Teachers Standard 2: Know the content and how to teach it.

Teachers can choose to undertake part, or all, of these learning sequences, however it is recommended to follow the complete sequence in order to achieve the best outcomes. Completing the activities in these Learning Sequences will enable students:

- to achieve outcomes in upper primary Geography and Science courses – see **Pg. 6** for details. Specific links are listed for each lesson
- to engage with the content of the Amazing Ecosystems book
- to think creatively and engage with alternative perspectives about their environment

These learning sequences loosely apply the 5 E's instructional model and the 8 Ways of Learning – see below for a more complete summary of these pedagogical approaches.

A digital edition of *Amazing Ecosystems* can be accessed here:

[janegoodall.org.au/australian-programs/resourcebox](http://janegoodall.org.au/australian-programs/resourcebox)

### TEACHER NOTE




This symbol indicates where teachers can take opportunities to differentiate and tailor learning to their students . This is also a chance to adapt content up and down learning years and stages.



## Pedagogical approaches applied in these resources

These learning sequences loosely follow inquiry-based learning into a modified 5Es instructional model (Bybee, 1997), with the five phases: Engage, Explore, Explain, Elaborate and Evaluate.

 TIME	5E's	Main ideas / skills
	Engage	Identifying and defining Connect past with present Create interest
	Explore	Researching and planning Encourage creative thinking Give common set of experiences Challenge own ideas
	Explain	Apply new vocabulary
	Elaborate	Producing and implementing Apply to new experiences
	Evaluate	Testing and evaluating. Have you changed your thinking?

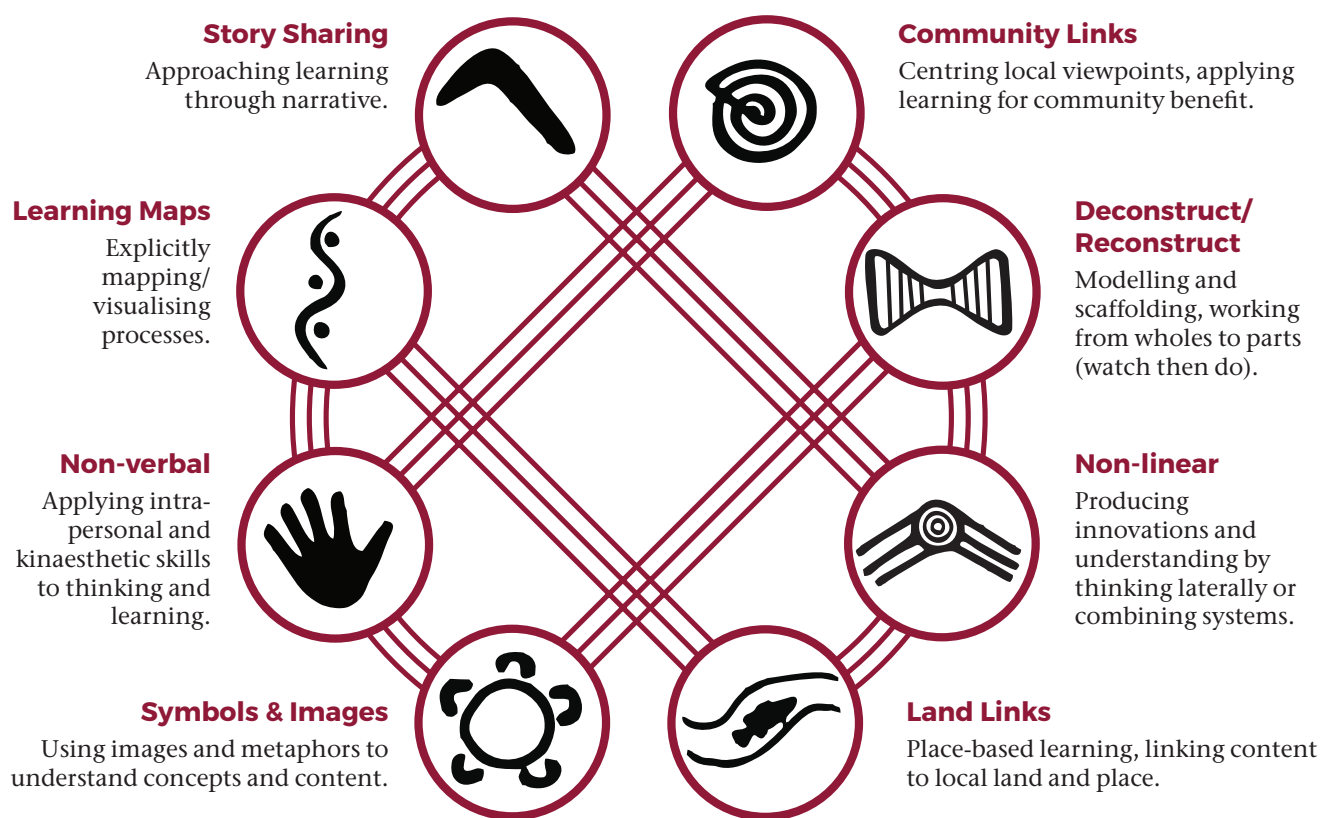


## 8 Ways of Learning Aboriginal Pedagogy Approach

*We acknowledge the Traditional Owners of western New South Wales, where this pedagogy was developed.*

For the best understanding of this pedagogy, and its value in applying it here and in your teaching, head to [www.8ways.online](http://www.8ways.online). The following summary is from that website.

**Throughout this resource you will see the symbols in this picture below. These indicate where these practises are incorporated into the learning sequences.**



This is a pedagogy framework that allows teachers to include Aboriginal perspectives by using Aboriginal learning techniques.

This Aboriginal pedagogy framework is expressed as eight interconnected pedagogies involving narrative-driven learning, visualised learning processes, hands-on/reflective techniques, use of symbols/metaphors, land-based learning, indirect/synergistic logic, modelled/scaffolded genre mastery, and connectedness to community.

Throughout this resource, you will see the following symbols. These indicate where these practices are incorporated into the learning sequences.

The meaning of each symbol is summarised simply above – for a more complete understanding, head to the [8ways](http://www.8ways.online) website.

# About Petaurus Education Group

*This Teacher Resource is written by Petaurus Education Group.*

Petaurus Education Group Inc. is a not-for-profit organisation based in Albury (on Wiradjuri Country) in southern NSW. Initiated by the local community, Petaurus is named after the threatened squirrel glider (*Petaurus norfolcensis*) that lives around Albury.

Established in late-2014, Petaurus aims to connect communities, schools and individuals with natural resource management topics such as land, water, biodiversity, productive and sustainable farming, and cultural awareness.

Petaurus creates on-ground, hands-on and local nature-based opportunities for schools to engage with their communities to promote and instil a sense of local pride and ownership in young people. Innovation and creativity are encouraged, as well as linking students to real-life community issues and challenges.

With hubs in Albury, Hay and Gol Gol, Petaurus staff and board members bring a range of experiences including teaching, science, community development, media and the arts, with the goal of developing and delivering quality engagement, education and communication that promotes positive change.

Petaurus works with a range of government and non-government groups and has an extensive network of contacts across the Murray-Darling Basin. Where possible, Petaurus aligns its teaching and learning activities to relevant state and national curriculum outcomes.

Petaurus works across the Basin, engaging and collaborating with communities to create balanced, productive and resilient regional landscapes and communities.

Learn more about our work and to download resources from our extensive library: [www.petaurus.org.au](http://www.petaurus.org.au)



Petaurus  
EDUCATION GROUP





# Introduction to Amazing Ecosystems

*From around 541 million years ago (the start of the Phanerozoic Eon), advanced, multicellular life forms dramatically proliferated, giving rise to the various lineages of organisms that exist today.*

The varied habitats that Earth offered were key to driving the diversification of life over time. Over millions of years, organisms colonised practically every part of the planet's surface and adapted to the conditions they found, from algae growing within the ice of the poles, to fish surviving in the eternally dark waters of the deep sea.

Over millions of years, countless animals, plants, fungi and other forms of life evolved together to form complex ecosystems in each habitat type. Today, each resulting ecosystem of our world comprises an infinitely complex community of organisms that are often interconnected or interdependent in various ways.

In the book, *Amazing Ecosystems*, we will explore many of the ecosystems and species that make our world so biologically rich. It is impossible to explore and fully explain every habitat niche in 160 pages. However, the intention of this work is to open young readers' minds to some of the main ecosystems which are found across our world. As we journey through our world's different ecosystems and habitats, many of the occupant animals, plants and fungi will be briefly documented.

Contents include:

- Polar Habitats
- Boreal Forests
- Temperate Deciduous Forests
- Tropical Rainforests
- Cloud Forests
- Uplands and Highlands
- Heathlands and Peat Bogs
- Savannas
- Deserts
- Ponds and Lakes
- Rivers
- Mangrove Forests
- Kelp Forests
- Tropical Coral Reefs
- Rock Pools
- Sea Grass Meadows
- The Deep Sea
- Hydrothermal Vents
- Caves and Underground
- Conservation and the Future





## Useful Links and Professional Learning

### Roots & Shoots

If you've an idea to benefit animals, people and environment – no matter how big or small – we want to help you. Across Australia, our Roots & Shoots local leaders are ready to guide our members in planning, creating and realising your activity. Whether you're an individual, youth group or school we provide the skills, tools and mentoring to make your activity a success.

### Australian Curriculum

These Learning Sequences are designed to be used by teachers and students across Australia and are therefore linked to Australian Curriculum outcomes. For latest developments and additional resources to support the teaching of Australian Curriculum, head to that website.

### Australian Association of Environmental Educators (AAEE)

Australia's peak professional body for environmental educators.

- Advocate for Environmental Education and promote best practice.
- Provide a network for cross-sector environmental educators.
- Promote the effective use of education to help people to live more sustainably.
- Support members via professional development.
- Build strong local networks that facilitate collaboration and skill sharing.



## Summary of Learning Sequences

Learning Sequence	Learning intentions	Main ACARA V9 curriculum links	Main learning experiences	Page
<b>Change and Survival in Amazing Places</b>  Estimated 7 lessons	Explain how human induced changes in ecosystems affect living things	<p><b>Year 6 Science:</b> Investigate the physical conditions of a habitat and analyse how the growth and survival of living things is affected by changing physical conditions (AC9S6U01)</p> <p><b>Year 6 Science:</b> Investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions (AC9S6H02)</p> <p><b>General Capabilities: Critical and Creative Thinking</b></p> <ul style="list-style-type: none"> <li>Generating</li> <li>Create possibilities</li> <li>Inquiring</li> <li>Identify, process and evaluate</li> </ul> <p><b>Cross-curriculum priorities: Sustainability Systems</b></p> <p>All life forms, including human life, are connected through Earth's systems (geosphere, biosphere, hydrosphere and atmosphere) on which they depend for their wellbeing and survival.</p>	<p>Film and image analysis and grouping using the Odd-One-Out game</p> <p>Descriptions using new vocabulary</p> <p>Summarising with the Who Am I? game</p> <p>Forecasting the future from an animals perspective</p>	<a href="#">8</a>

## Learning Sequence:

# Change and Survival in Amazing Places

### Overarching Inquiry Question:

What are some of the human activities threatening habitats across the globe?

### Learning Intentions:

Explain how human induced changes in ecosystems affect living things

### Success Criteria:

**I can** investigate the physical conditions of an ecosystem and a threat to a living thing in that ecosystem.

**I can** investigate and describe the physical conditions of an ecosystem and a human induced change that threatens the habitat of a living thing in that ecosystem.

**I can** investigate and describe the physical conditions of an ecosystem and analyse how human induced changes threaten the habitat of living things in that ecosystem.

### Main Outcomes

**Year 6:** **Science:** Investigate the physical conditions of a habitat and analyse how the growth and survival of living things is affected by changing physical conditions (AC9S6U01)

Investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions (AC9S6H02)

### KEY VOCABULARY

Accelerated

Ecosystem

Endangered

Habitat

Latitude

Prediction

Threatened

Threats

### TEACHER NOTES

Link to local: compile information about a/some locally threatened species and the changes that have caused this decline. Some local expertise to draw on could be your local land management authorities like national parks, Landcare groups, or BirdLife Australia.

Many of the threatened species noted in the book have been the subject of films.

If you choose to focus on Ponds & Lakes or Rivers ecosystems, consider diving into the "Need a Helping Hand?" chapter of the *Rivers & Wetlands of the Murray-Darling Basin* book in your Roots & Shoots Resource Box. This inspiring chapter showcases some of the people and organisations who are helping manage the changes that are threatening habitats and living things in the Murray-Darling Basin.

### SPECIAL NOTES

Icons like this:



indicate opportunity for differentiation, including up and down learning stages



indicate how this relates to the 8 ways of learning pedagogy





indicate a page number in the Living Landscapes book



# Learning Sequence: Change and Survival in Amazing Places

## Lesson 1

Content	Teaching learning and assessment	Resources
<b>ENGAGE</b>  <b>General Capabilities:</b>  Personal & Social Capability  Critical & Creative Thinking  Civics and Citizenship	<p><b>What is an ecosystem?</b></p> <p>Show some of the amazing images of ecosystems from the book (<a href="#">Appendix A</a>). Ask students to identify the different types of organisms they see and discuss what they think an ecosystem is.</p> <p>Introduce the key vocabulary words and ask students to explain what they think they mean.</p> <p><b>Ecosystem Explorers:</b></p> <p>Create a diagram of an ecosystem on the board. Explain that if habitats are like homes for animals, an ecosystem is like a city. Label the different types of organisms and ask students to explain how they think they interact with each other. You may choose to add to the woodland example in <a href="#">Appendix A</a>.</p> <p>Split students into small groups and have them discuss:</p> <ul style="list-style-type: none"> <li>• Their house</li> <li>• Their favourite food</li> <li>• Their favourite activity</li> <li>• What their bedtime is</li> </ul> <p>Bring them back together, did everyone answer the same? Explain that just like us, animals have different needs and preferences.</p> <p>Introduce the concept of a food web and explain how it affects the ecosystem. Show an example of a food web and explain how each organism is connected to each other.</p> <p>Split students into small groups and give them a specific ecosystem to create their own food web. They will use pictures of different organisms to create their food web and explain how each organism is connected to each other.</p> <p>Review the food webs created by the small groups and ask students to explain how they created their food web and why they chose certain organisms to include.</p> <p> Ask students to write a short paragraph about why it is important to understand ecosystems and how they can affect our daily lives.</p>	<p><b>Teacher Resources:</b></p> <p>Copies of Amazing Ecosystems book (note digital version available) - see <a href="#">page 1</a></p> <p><b>Lessons Resources:</b></p> <p>Food webs found online</p> <p>Woodland Ecosystem diagram <a href="#">Appendix A</a></p> <p><b>**make sure to use native-based examples and include decomposers as an extension.</b></p> <p></p>



# Learning Sequence: Change and Survival in Amazing Places



## Lesson 2

Content	Teaching learning and assessment	Resources
<b>ENGAGE</b>	<p><b>What are these places, how are they changing, and how are they connected to me?</b></p> <p><b>See Think Wonder</b></p> <p>Begin the lesson by showing pictures of various ecosystems and ask students to identify them (<a href="#">Appendix B</a>). Ask questions such as:</p> <ul style="list-style-type: none"> <li>• What do you think lives in this ecosystem?</li> <li>• What do you think happens when we change this ecosystem?</li> <li>• How do you think living things adapt to changes in their environment?</li> </ul> <p>Take a note of these answers to revisit in lesson 6.</p> <p>Divide the class into groups of 3-4 and provide each group with a case study on the impact of human activities on an ecosystem (<i>newspaper clippings, reports, a range of media, and for diverse learners a podcast or video or just images</i>). The case study can include deforestation, pollution, overfishing, and more.</p> <p>Provide students with a chart to fill in as they read the case study. The chart should include information such as the cause of the problem, how it affects living things, and possible solutions.</p> <p>After reading the case study, students present their findings to the class.</p> <p>As a class, discuss the impact of human activities on ecosystems. Use the case studies as examples.</p> <p>Prompting questions:</p> <ul style="list-style-type: none"> <li>• What are some of the ways that humans change ecosystems?</li> <li>• How does this affect living things in the ecosystem?</li> <li>• What can we do to reduce the negative impact of human activities on ecosystems?</li> </ul> <p>In groups, students brainstorm ways they can reduce their negative impact on the environment at school. Give them some butcher paper to express their ideas.</p> <p>Have groups present their ideas to the class and discuss which ones are most effective.</p> <p>Students will complete a reflection on what they learned from the lesson. They will answer questions like,</p> <ul style="list-style-type: none"> <li>• What did you learn today?</li> <li>• How can you use this knowledge to reduce your impact on the environment?</li> <li>• Why is it important to reduce our impact on the environment?</li> </ul> <p><b>What is this place??!</b> (<a href="#">Appendix B</a>)</p> <p>Instructions included with the appendix</p>	<p><b>Teacher Resources:</b></p> <p>Find each image in the book for context or use <a href="#">Appendix B</a></p> <p><b>Resources Required:</b></p> <p>Newspaper clippings</p>



# Learning Sequence: Change and Survival in Amazing Places

## Lesson 3

Content	Teaching learning and assessment		Resources				
EXPLORE	<div><div></div><div></div></div>	<h3>What lives there?</h3> <p><b>Prediction</b></p> <p>Using images of living things (see <a href="#">Appendix C</a> for a compilation), record what you think the letters mean. Predict: why do you think this species is threatened or endangered?</p> <p><b>Odd-One-Out</b></p> <p>Using images of living things (<a href="#">Appendix C</a>):</p> <p>Students group the images based on whatever grouping they devise, then challenge each other to find the odd one out. Groupings could be based on habitat; based on animal type, shape or size; or based on conservation indicator (see page 7)</p> <p>Add in images of threats (end of <a href="#">Appendix C</a>) – complete Odd-One-Out again.</p> <p><b>Fact Finding</b></p> <p>For each ecosystem in the book (use whole book or <a href="#">Appendix B</a>), choose three animals or plants that live in that ecosystem.</p> <p><b>What is the most interesting thing about each of them?</b></p> <p>After completing the fact-finding activity, students can reflect on their learning and their experience. Give each student a piece of paper and ask them to divide it into four quadrants as below:</p> <table><tr><td>Something I learnt</td><td>Something that was challenging</td></tr><tr><td>Something I can do</td><td>Something that was fun</td></tr></table> <p>As a whole class, ask students to share their reflections and discuss any themes or patterns that emerged. This can be an opportunity to address any questions or misconceptions that students may still have.</p>	Something I learnt	Something that was challenging	Something I can do	Something that was fun	<p><b>Lessons Resources:</b></p> <p><a href="#">Appendix B</a></p>
Something I learnt	Something that was challenging						
Something I can do	Something that was fun						

# Learning Sequence: Change and Survival in Amazing Places




## Lesson 4

Content	Teaching learning and assessment	Resources
<b>EXPLAIN</b>	<p><b>What are the physical conditions of this habitat?</b></p> <p><b>Create an Ecosystem Profile</b></p> <p>Choose an ecosystem from the book – we recommend the following as the most accessible options: tropical rainforests, rivers, savanna, coral reefs, ponds and lakes, caves, polar lands.</p> <p>Create a profile of the physical conditions of that ecosystem using the following information on the opening pages of each chapter.</p> <ol style="list-style-type: none"> <li>1. Create a class list of new words discovered after reading that part of the book. Note key vocabulary words (<b>page 8</b>).</li> <li>2. Locate the ecosystem on a world map or a globe. This can use country and continent names or latitude.</li> </ol> <p>Students create a profile of an ecosystem they have selected. Students will then begin to create their ecosystem profile by describing the climate, vegetation, water, landscape and landforms, and fauna of the ecosystem. They will use the new vocabulary they have discovered, and any additional vocabulary provided by the teacher to write descriptive paragraphs for each section.</p> <p>After creating their ecosystem profiles, students can participate in a gallery walk activity where they share and learn from each other's work. Here's how the activity can be organised:</p> <p>Arrange the classroom desks to create stations for each ecosystem profile. Hang up the profiles on the walls or place them on the desks at each station. Assign each student a starting station to begin the gallery walk.</p> <p>In pairs or small groups, students will move from station to station, reading and analysing each profile.</p> <p>As they move through the stations, prompt students to guide their analysis, such as:</p> <ul style="list-style-type: none"> <li>• What is the name of the ecosystem?</li> <li>• What is the climate like?</li> <li>• What kind of vegetation is present?</li> <li>• What is the water like?</li> <li>• What is the landscape like?</li> <li>• What kind of fauna live in the ecosystem?</li> <li>• What new vocabulary did you learn from the profile?</li> </ul> <p>As a whole class, students can reflect on the similarities and differences they noticed among the ecosystems and the new vocabulary they learned. They can also share any questions or curiosities that arose from the activity.</p>	<p><b>Teacher Resources:</b></p> <p>Recommended chapters from Amazing Ecosystems</p> <p><b>Lessons Resources:</b></p> <p>Copies of Amazing Ecosystems book</p> <p>World map and blank world maps showing countries and latitudes (if using); globe</p>









# Learning Sequence: Change and Survival in Amazing Places

## Lesson 4 (Continued)

Content	Teaching learning and assessment		Resources																		
EXPLAIN		<p>After completing the ecosystem profile and gallery walk activities, students can reflect on their learning and their experience. Give each student a piece of paper and ask them to divide it into four quadrants as below:</p> <table border="1"><tr><td>Something I learnt</td><td>Something that was challenging</td></tr><tr><td>Something I can do</td><td>Something that was fun</td></tr></table> <p>As a whole class, ask students to share their reflections and discuss any themes or patterns that emerged. This can be an opportunity to address any questions or misconceptions that students may still have.</p> <p><b>What changes are occurring in this habitat?</b></p> <p><b>Summarising Human Activity and Its Impacts</b></p> <ol style="list-style-type: none"><li>1. Summarise the threats – divide into groups and allocate an ecosystem to focus on. Each group reads about the threats to an ecosystem using the section at the end of each chapter.</li><li>2. Have students take turns explaining to the other groups. Note any questions that arise and consider allowing time for research to answer these questions.</li><li>3. Either as students are explaining threats, or afterwards, teacher leads a discussion about the following terms used to describe environmental changes – which ones match the ecosystems allocated in Step 1?:</li></ol> <table border="1"><tr><td>Decline</td><td>Abundance</td></tr><tr><td>Rapid</td><td>Introduced species</td></tr><tr><td>Destruction</td><td>Pollution</td></tr><tr><td>Waste</td><td>Climate change</td></tr><tr><td>Build up</td><td>High-intensity</td></tr><tr><td>Habitat loss</td><td>Deforestation</td></tr><tr><td>Stable</td><td>Chemical use</td></tr></table> <p>Threats are mentioned at the end of each chapter and also selectively on page 155.</p>	Something I learnt	Something that was challenging	Something I can do	Something that was fun	Decline	Abundance	Rapid	Introduced species	Destruction	Pollution	Waste	Climate change	Build up	High-intensity	Habitat loss	Deforestation	Stable	Chemical use	<p><b>Teacher Resources:</b></p> <p>Recommended chapters from Amazing Ecosystems</p> <p><b>Lessons Resources:</b></p> <p>Copies of Amazing Ecosystems book</p> <p>World map and blank world maps showing countries and latitudes (if using); globe</p>
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Waste	Climate change																				
Build up	High-intensity																				
Habitat loss	Deforestation																				
Stable	Chemical use																				
																					
		<p><b>Who Am I? game</b></p> <p>Students come up with a series of 5 to 10 statements about a chosen ecosystem. Include descriptions of the physical conditions of the ecosystem, as well as the threats. Challenge students to use new terms explained previously. Statements are based upon the characteristics that are unique to that ecosystem so that others will be able to identify the ecosystem.</p>																			

# Learning Sequence: Change and Survival in Amazing Places

## Lesson 5

Content	Teaching learning and assessment		Resources			
<div>ELABORATE</div> <div>General Capabilities:</div> <div>Literacy</div> <div>Critical &amp; Creative Thinking</div>	<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div><h3>What is the impact of changes in this habitat on living things?</h3><h4>Forecasting the Future from an Animal's Perspective:</h4><p>Using the information in the threats section of the chapter, animal profiles throughout the book, as well as further research, if possible, consider the impact of environmental changes on the animals that live in that place. Focus on threatened and endangered species for easiest research.</p><p>Draw, write, or act out what their future would be like, using the following scenarios as structure:</p><p>What would happen if the threats continued?</p><ul style="list-style-type: none"><li>• "If we do this (human induced change), then this happens (effects)."</li><li>• "If we do this (human induced change), then this happens to my climate."</li><li>• "If we do this (human induced change), then this happens to my food sources (prey)."</li><li>• "If we do this (human induced change), then this happens to my home/habitat."</li></ul><h4>Optional Extension: Taking Action</h4><p>If you have focused on Ponds &amp; Lakes ecosystems (Page 84) or Rivers ecosystems (Page 96) consider diving into the "Need a Helping Hand?" Chapter of the <i>Rivers and Wetlands of the Murray-Darling Basin</i> book in your Roots &amp; Shoots Resource Box. This inspiring chapter showcases some of the people and organisations who are helping manage the changes that are threatening habitats and living things in the Murray-Darling basin.</p><p>Revisit the above forecast statements and consider: What would happen if it stopped?</p><p>"If we do this (action), then this happens (effects)"</p><h4>Think Local:</h4><p>Find a locally threatened or endangered species. Research to complete the Explore and Explain activities above.</p><p>Consider inviting a guest speaker who works to manage this species. Complete the forecast scenarios for this species.</p><p>After completing the activities, students can reflect on their learning and their experience. Give each student a piece of paper and ask them to divide it into four quadrants like below:</p><table><tr><td>Something I learnt</td><td>Something that was challenging</td></tr><tr><td>Something I can do</td><td>Something that was fun</td></tr></table><p>As a whole class, ask students to share their reflections and discuss any themes or patterns that emerged. This can be an opportunity to address any questions or misconceptions that students may still have.</p></div>	Something I learnt	Something that was challenging	Something I can do	Something that was fun	<div>Teacher Resources:</div> <div>Additional sources of information about the threatening processes that are endangering ecosystems</div> <div>Lessons Resources:</div> <div>The <i>Rivers and Wetlands of the Murray-Darling Basin</i> book in your Roots &amp; Shoots Resource Box</div> <div>Possible guest speaker to share stories about locally threatened species</div>
Something I learnt	Something that was challenging					
Something I can do	Something that was fun					



# Learning Sequence: Change and Survival in Amazing Places

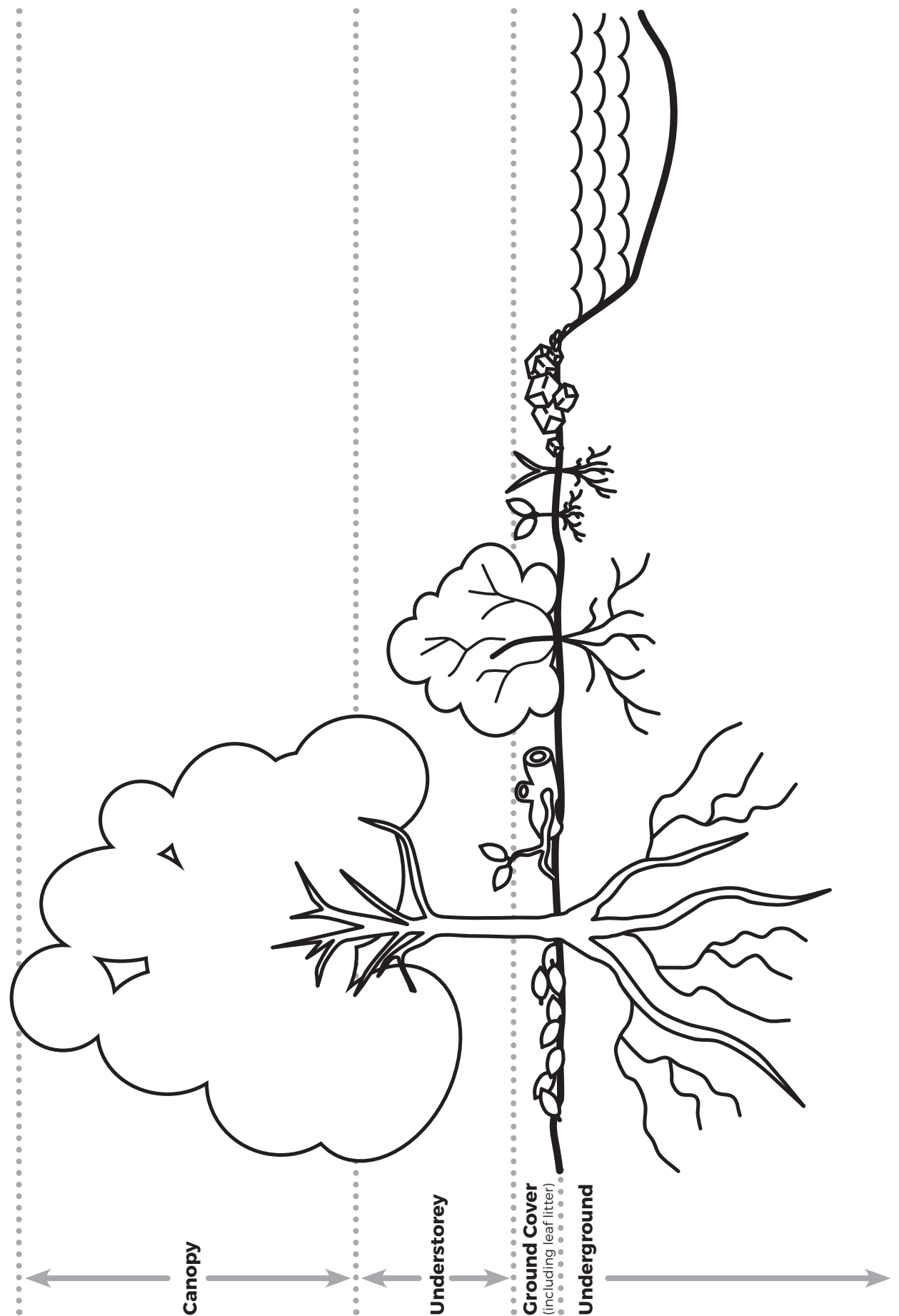
## Lesson 6

Content	Teaching learning and assessment	Resources
<b>EVALUATE</b>  <b>General Capabilities:</b>  Personal & Social Capability  Critical & Creative Thinking	<p><b>How has my thinking changed?</b></p> <p>Consider including the See Think Wonder and What is this place??! conversation starters from the first ENGAGE phase of this learning:</p> <ul style="list-style-type: none"> <li>• What changes are occurring in this place?</li> <li>• How is your life connected to this place?</li> <li>• Based on these images, where would you like to live now and in the future, and why?</li> </ul> <p>Do you still have the same opinion? How has your thinking changed?</p> <p>Consider your early prediction about why that animal was threatened or endangered. Were you correct?</p> <p>Students can undertake an analysis of their ecological footprint online for the school or for home and come up with actions to reduce their footprints.</p> <p>Students can then create posters about these changes starting with: I can make a difference by...</p> <p>and email JGIA their posters - details on our website <a href="http://rootsandshoots.org.au">rootsandshoots.org.au</a></p>	<b>Lessons Resources:</b>  Recordings from the ENGAGE phase of this sequence



## Appendix A:

# Woodland Ecosystem





## Appendix B:

# What is this place??!



- How is your life connected to this place? Prompts: visits, family connections, resources from this place such as wood, media such as TV shows that are set in places like this.
- What changes are occurring in this place? Prompts: day to night, seasons, erosion by wind and rain, natural disasters, trees falling, animals migrating, human activity such as tourism. Assess awareness of human induced issues.
- Based on these images, where would you like to live now and, in the future, and why?

### Uplands and Highlands

(page 52)



### Polar

(page 8)



### Tropical Rainforest

(page 36)



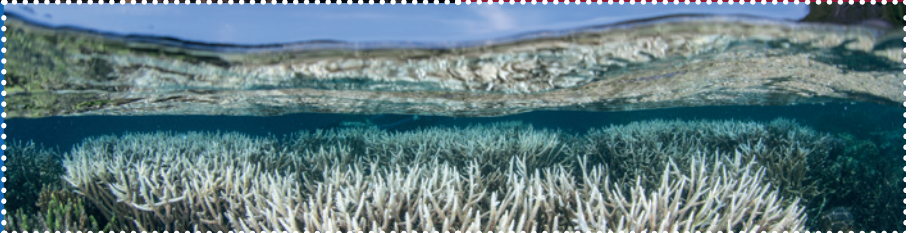
### Caves and Underground

(page 146)



### Tropical Coral Reefs

(page 120)



### Rivers

(page 96)



### Ponds and Lakes

(page 84)





## Appendix C:

# Odd One Out

Page Number in *Amazing Ecosystems* indicated in orange circle #

 <p><b>Chambered Nautilus</b> <i>Nautilus pompilius</i></p>	 <p><b>Wandering Albatross</b> <i>Diomedea exulans</i></p>	 <p><b>Polar Bear</b> <i>Ursus maritimus</i></p>
 <p><b>Walrus</b> <i>Odobenus rosmarus</i></p>	 <p><b>Jaguar</b> <i>Panthera onca</i></p>	 <p><b>Mountain gorilla</b> <i>Gorilla beringei beringei</i></p>
 <p><b>Sumatran Orangutan</b> <i>Pongo abelii</i></p>	 <p><b>African Bush Elephant</b> <i>Loxodonta africana</i></p>	 <p><b>Cheetah</b> <i>Acinonyx jubatus</i></p>
 <p><b>Pangolin</b> <i>Smutsia temminckii</i></p>	 <p><b>Axolotl</b> <i>Ambystoma mexicanum</i></p>	 <p><b>Azure Kingfisher</b> <i>Ceyx azureus</i></p>



## CONSERVATION CODES

To learn more about how conservation status is assigned please see the lesson on our [website](#)



**Extinct**



**Extinct in Wild**



**Critically Endangered**



**Endangered**



**Vulnerable**

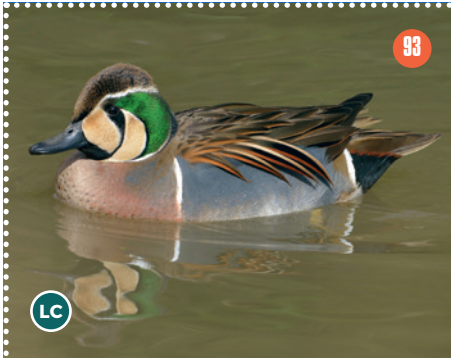


**Near Threatened**



**Least Concern**

THREATENED



LC

93

**Baikal Teal**

*Sibirionetta formosa*



LC

90

**Common Carp**

*Cyprinus carpio*



EN

98

**Amazon River Dolphin**

*Inia geoffrensis*



LC

99

**Black Caiman**

*Melanosuchus niger*



VU

101

**European Grayfish**

*Astacus astacus*



EN

122

**Green Sea Turtle**

*Chelonia mydas*



EN

122

**Whale Shark**

*Rhincodon typus*



LC

125

**Red Gorgonian Sea Fan**

Family: Gorgoniidae



LC

155

**Edible-Nest Swiftlet**

*Aerodramus fuciphagus*



LC

149

**Greater Horseshoe Bat**

*Rhinolophus ferrumequinum*



LC

150

**New Zealand Glow-Worms**

*Arachnocampa luminosa*



EN

109

**Proboscis Monkey**

*Nasalis larvatus*



## Appendix D:

# Threats

Page Number in *Amazing Ecocosystems* indicated in orange circle #



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