



Fighting Extinction Challenge

Teacher Answers

Middle Years 9-10



Wurundjeri Investigation

We are all custodians of the land, just as the Wurundjeri have been for thousands of years.

During your independent investigation around the Sanctuary look for ways that the Wurundjeri people lived on country and record these observations in the box below.

Look (what you saw) 	Hear (what you heard) 	I wonder... (questions to ask an expert or investigate back at school) 
<ul style="list-style-type: none"> • Bunjil • Waa • Mindi • Signs about plant uses • Signs about animal dreaming stories • Sculptures • Scar Tree • Bark Canoe • Gonyah • Information about Coranderrk • William Barak sculpture • Information about William Barak • Artefacts (eg eel trap, marngrook, possum skin cloak) 	<ul style="list-style-type: none"> • Soundscapes • Information from education officers • Dreaming stories at feature shows • Information about Wurundjeri Seasons • Didjeridoo 	

1. **Identify and explain** how did indigenous people impact upon their environment?
 - Indigenous people changed the landscape using fire stick farming which also assisted hunting
 - Aboriginal people used their knowledge of the seasons to optimise hunting, gathering, eel farming and more
 - Aboriginal people used organic local materials to create tools to assist them with hunting and gathering their food i.e. eel traps, woven grass baskets, rock fish traps etc.
 - They only ever took what they needed from the land and had a deep respect and spiritual connection to the land and their surroundings.

2. **How are humans impacting on natural resources in today's society? How does this affect wildlife?**
 - When the land is disrespected, damaged or destroyed, this can have real impact on the wellbeing of people, plants and animals.
 - European settlers and modern day humans have caused land degradation by:
 - Introducing poor farming practices causing land degradation
 - Introducing noxious weeds
 - Changing water flow courses and draining wetlands
 - Introducing feral animals
 - Destroying habitat through urbanization, logging and farming practices

3. **Indigenous Australians each had totem animals which helped to ensure they had a deep connection with the land. Explain what totemism meant to the Wurundjeri people and identify some examples of different totems? How have human relationships changed with wildlife over time?**
 - Totemism for Indigenous Australians is linked to the Dreamtime - the time of creation, when the ancestral beings, the totemic ancestors, roamed the land, giving birth to the people of the totemic groups and naming the animals, plants, landscape features, etc. Wurundjeri totems include Bunjil the eagle, Waa the crow and Mindi the snake. There are many other totems including both plants and animals. Having a spiritual connection to animals, plants and places means that Aboriginal people understand that everything contains Spirit and everything needs to be treated with respect. Instead of ownership, indigenous people are custodians or care takers. Over time, Westerners have changed their relationship with the land, animals and plants to be things that we own, fit for human consumption and replaced our spiritual connection to plants and animals with monetary values. This is changing as we realise the impact on the environment and conservation movements are now including the wisdom of first nations people.

Fighting Extinction Challenge Investigation – Places of interest

👁️ **Observe** your group leaders' map and locate the **6 locally endangered species** below.



Record as much information about each animal by *observing* the animal, *listening* to stories and *asking questions* of our keepers, educators and volunteers. Look out for the interpretive signage or videos located around the sanctuary to help you answer the questions below.

FE species	Cool facts e.g. Something you didn't know	Habitat/ Ecosystem e.g. where it lives in Australia.	Threats e.g. Human Impacts	Adaptations e.g. how it survives
 <p>Nocturnal House – Leadbeater's possum</p>	<ul style="list-style-type: none"> For about half a century, Leadbeater's possums were believed to be extinct, but in the beginning of 1960s the species was rediscovered. faunal emblem for Victoria (Australia) since 1971 	<p>Distribution: Central Highlands and Yellingbo, Victoria.</p> <p>Habitat: wet sclerophyll old growth forest, Snow Gum and Mountain Ash forests Dense vegetation of melaleuca to enable connectivity through the forest</p>	<ul style="list-style-type: none"> Habitat destruction Draining of wetlands Introduced deer that graze in possum habitat Logging Bushfires Climate Change events 	<ul style="list-style-type: none"> Sharp claws and rigid pads on their paws allow the possum to grip, run and jump across branches The Leadbeater's possums repeat a high pitched "alarm hiss" when fighting or being threatened Club shaped tail to collect and carry bark for nests
 <p>Fighting Extinction Aviary – Helmeted Honey-eater</p>		<p>Distribution: Yellingbo Nature Reserve Victoria</p> <p>Habitat: streamside swamp forest</p>	<ul style="list-style-type: none"> Logging Grazing from introduced animals and livestock Drought Wildfire Disease Introduced birds and competition Poor drainage in habitat 	<ul style="list-style-type: none"> Eats sap, insects and nectar from trees and can move their tongues 10 times per second. Fast flyer Camouflage against flowers and foliage Builds nest out of cobwebs, sticks and feathers
 <p>Fighting Extinction Aviary – Southern Corroboree Frog</p>		<p>Distribution: Kosciusko N.P & Brindabella Ranges</p> <p>Habitat: small seasonal wetlands and surrounding vegetation in the Australian Alps above 750m</p>	<ul style="list-style-type: none"> Disease caused by the amphibian Chytrid Fungus Habitat destruction from hard hooved introduced animals Wildfires Climate Change 	<ul style="list-style-type: none"> The Corroboree Frog produces its own toxic poison to repel predators Walks rather than jumps Winter torpor: inactive during the winter Camouflage into sphagnum moss
 <p>Woodlands track – Brush-Tailed Rock-wallaby</p>		<p>Distribution: Great Dividing Range from southeast Queensland to Western Victoria's Grampians</p> <p>Habitat: Rocky escarpments, granite outcrops and cliffs, which have caves and ledges for shelter</p>	<ul style="list-style-type: none"> Clearing of native vegetation Exotic plant invasion Changed patterns of fire Introduced Predators (foxes and cats) 	<ul style="list-style-type: none"> The Wallabies can climb tall trees with their sharp claws and strong legs They can also climb almost vertical rocks Camouflage into the shadows of rock escarpments
 <p>Woodlands track – Tasmanian Devil</p>		<p>Habitat: Sclerophyll forest and coastal woodlands</p> <p>Distribution: found in all habitats on the island of Tasmania</p>	<ul style="list-style-type: none"> Devil Facial Tumour Disease (DFTD) Habitat destruction Vehicle collisions Wildfire 	<ul style="list-style-type: none"> Tassie Devils can eat bone, fur and cartilage with their strong jaws Can smell dead decaying matter from over 2km Dark coat helps them camouflage at night Pouch to keep young in
 <p>Reptile House – Guthega Skink</p>		<p>Habitat: live in alpine tussock grasslands, heathlands and snow gum woodlands</p> <p>Distribution: Victorian Bogong and NSW Mt Kosciusko high plains.</p>	<ul style="list-style-type: none"> The construction and maintenance of ski resorts and roads Grazing and trampling by exotic herbivores such as feral horses and cattle Fires 	<ul style="list-style-type: none"> The Guthega Skink has a clever way of surviving the cold winter temperature in its alpine habitat by burrowing under the rocks. Small size and colour helps it camouflage amongst rocks

What is Zoos Victoria doing to help save wildlife?

- **Wipe for wildlife campaign** - Promotes using recycled toilet paper to save habitat. This in turn will raise awareness towards endangered native species and give power to conservation-sensitive consumers.
- **Bubbles not balloons campaign** – At your next outdoor event, promise to use wildlife-friendly alternatives, such as bubbles, instead of balloons and help save seabirds.
- **Love Your Locals campaign** – In collaboration with recovery teams and experts from around Australia, Zoos Victoria has developed a five year Wildlife Conservation Master Plan which includes conservation projects that our 21 most endangered species need to ensure a future. Zoos Victoria need s community financial support where schools and zoo members can make a one off donation.
- **Safe cats, safe wildlife campaign** - This campaign is aimed to help cat owners provide a safe and fun space for their cat to thrive at home with expert advice.
- **Breeding/ release programs** – Zoos can maintain insurance populations for species that face extinction in the wild and breed animals for re-introduction to the wild once threatening processes have been mitigated.
- Zoos Victoria has a strong commitment to captive breeding and recovery programs for threatened species, in particular through our *Fighting Extinction* Programs. Our research aims to increase our understanding of how various factors influence captive breeding and reintroduction success including:



- How to increase the number and fitness of offspring produced
- Identifying optimal methods for re-introduction of native wildlife back into the wild
- Maximising survivorship and reproduction of released individuals



Draw or write your ideas to help save wildlife:

