Wilderness Society
Life. Support.

Environment Award for Children's Literature

Feathers, Fur and Flippers
Prep to Grade 3

Sustainability Focus

This lesson explores the interdependence of systems that support life on Earth, as well as social values and ecological patterns of living that promote the sustainability of our local environments.

Education for sustainability develops the knowledge, skills and values necessary for people to act in ways that contribute to more sustainable patterns of living.

Students gain an appreciation that all life is connected through ecosystems, and humans depend on ecosystems for their wellbeing.

Relevant Links to the National Science Curriculum

Foundation/Prep Year

Science Understanding
— Biological Sciences

- Living things have basic needs, including food and water

Science Inquiry Skills

- Processing and analysing data and information — engage in discussions about observations and use methods such as drawing to represent ideas
- Communicating — share observations and ideas

Year 1

Science Understanding
— Biological Sciences

- Living things live in different places where their needs are met

Science as a Human Endeavour

- Use and influence of science — people use science in their daily lives, including when caring for their environment and living things

Science Inquiry Skills

- Questioning and predicting — respond to and pose questions; make predictions
- Communicating — represent and communicate observations and ideas in a variety of ways, such as oral and written language, drawing and roleplay

Year 3

Science Understanding
— Biological Sciences

- Living things can be grouped on the basis of observable features and can be distinguished from non-living things

Science as a Human Endeavour

- Nature and development of science — science involves making predictions and describing patterns and relationships
- Use and influence of science — science knowledge helps people to understand the effect of their actions

Science Inquiry Skills

- Communicating — represent and communicate ideas and findings in a variety of ways, such as diagrams, physical representations, simple explanations and arguments

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Engage

Teacher and student class discussion (suggested answers are given to assist teachers):

1. What sorts of things do humans need to stay alive? (Students may respond with food, water, shelter, clean air, suitable temperature etc.)

2. Would these be the same for animals like Fairy Possums, whales or cassowaries? (Teachers can have images of these animals on a data projector or use young children's books that show these. Students should agree with these broad groupings and, depending on their age level, may add others such as protection from predators and disease, mates so that reproduction can occur, and for protection in colonies)

Explore

1. Match the animal with their habitat using the activity supplied in Appendix A. Why do you think each animal lives there? (Suitable for the younger students. Teachers can then discuss responses)

2. Choose one of the animals from the list and research their specific needs and how these needs are met. Combine your answers with others in the class (Younger students can draw examples of the animal's food beside each of the animals or pictures of their teeth, beak, baleen plate etc.)

basic needs	Fairy Possum	Southern right whale	Cassowary
food	Wattle sap; arthropods which they find under the loose bark of Eucalypts e.g spiders, crickets, termites and beetles; water	Mainly small crustaceans like copepods and krill, as well as plankton. They are baleen whales which means they don't have any teeth, and feed by filtering food through 220-260 baleen plates which hang from each side of their upper jaws. The baleen is up to 2.8m long, and is fringed by long, fine, greyish bristles. Southern rights hunt their prey by swimming with their mouth open and trapping their prey in their baleen bristles, while also filtering water out of their mouth	Fruit; seeds; berries from the rainforest; small invertebrates and vertebrates; water from local streams as well as from food
Habitat	Lives an arboreal life (within the treetops or canopy of the forests), and makes nests in old growth trees. This helps the possum hide from predators during the day	Aquatic/marine habitat — water supports the whale through buoyancy, and provides food and a suitable temperature range	As a ground-dweller, cassowaries rely on their bright plumage to blend in with rainforest plants — an example of camouflage. The tropical climate means the temperature is fairly stable and the range suitable for the cassowary

Explain

1. Living things can be grouped according to similar features that differ from other groups. How does the outer covering and method of movement differ for these three organisms? Complete the table below.

Feature	Fairy Possum	Southern right whale	Cassowary
Outer covering	Fur covering the skin	Skin. Has rough patches of skin (or callosities) on their large heads	Feathers
Method of movement	Has four limbs (two arms and two legs) to crawl up tree trunks, as well as claws on hands and feet to grip branches (no gliding membrane)	Uses their broad tails, two side flippers and the muscular movements of their bodies to move through the water (no dorsal fin). Flippers are short and broad to power through the water	Ground-dwelling flightless bird. Body is too large for flight. Can use their two legs to run at reasonable speeds for a short time. Wings can flap slightly to assist with this

Elaborate

1. The survival of some of the animals is under threat. Work individually or in pairs and choose one of the following three animals to research. What are some threats to their life?

Threat	Fairy Possum	Southern right whale	Cassowary
Loss of habitat	Logging is removing the trees/habitat that the possums call home. Food and shelter are removed, making them more vulnerable to predation. The demand for timber (for paper and housing) is causing this deforestation problem	Vessel traffic, coastal development, oil exploration (BP is looking to drill for oil in the Great Australian Bight), and marine mining pose a risk to the whale's habitat	Removal of native habitat/ rainforest for farming, housing, and tourism is having an effect, as food and shelter are removed
Climate change	Increased severity and frequency of drought (brought about by climate change), disease, and bushfires are also having an impact	It is generally recognised that this will substantially alter ocean conditions, thus affecting the whale's habitat	More frequent and severe cyclones are destroying large sections of rainforest

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Threat	Fairy Possum	Southern right whale	Cassowary
Rubbish	With foreign human rubbish littering their habitat, the possums risk accidentally eating bits of plastic, getting caught in nets or rope (constricting movement or ability to breathe), or having the rubbish leach or contaminate their food and water	With foreign human rubbish littering their habitat, the whales risk accidentally eating bits of plastic, getting caught in nets or rope (constricting movement or ability to breathe), or having the rubbish leach or contaminate their food and water	With foreign human rubbish littering their habitat, the cassowaries risk accidentally eating bits of plastic, getting caught in nets or rope (constricting movement or ability to breathe), or having the rubbish leach or contaminate their food and water
Other	Feral cats are predators of the possum	Until 1935, whaling was the primary threat for this species, but they've been protected since then. General whaling stopped in 1978 in Australia. The southern rights (Eubalaena glacialis) got their common name from the fact that they were "the right whale" to hunt. Whales also risk collisions with vessels and entanglements in fishing gear	Large feral cats and dogs increase predation levels

2. What sorts of things can you do to try to reduce these threats?

   a Always put rubbish in the bin
   b When you go out in nature, always remember to take all your belongings with you
   c Recycle as much paper as possible so the demand will decrease
   d Keep all cats in at night
   e Talk to three adults about what you've learned today

3. Predict what will happen to your animal if we don't do anything to reduce these threats?
   (Students can discuss the concept that they may all die out — extinction. Older students could research the stages to extinction such as endangered, critically endangered, extinct in the wild etc.)

4. Head to eacl.org.au/learn to read three short stories about a Fairy Possum, southern right whale and cassowary by authors Narelle Oliver, Michael Gerard Bauer and Samantha Wheeler. Ask your students to choose their favourite story, then either write or illustrate a response. We'd love to see them! Email us at eacl@wilderness.org.au and let us know your name, age, and where you're from!

5. Showcase to other students what you have discovered. Some suggestions include:

   - A show and tell to other classes in the school
   - Lunchtime display
   - Display in the library
   - Talk on assembly

Evaluate

1. What have you learnt today about these animals?

2. Has this changed your views about how people interact with their environment? If so, how?

Using what you've learned from this lesson plan or one of the three short stories by authors Narelle Oliver, Michael Gerard Bauer and Samantha Wheeler (eacl.org.au/learn) write or illustrate a nature scene. We'd love to see them! Email us at eacl@wilderness.org.au and let us know your name, age, and where you're from!

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Appendix A: Student Activity

Match the animal (left) to the habitat in which they live (right).

Fairy Possum

IMAGE: Steven Kuiter

Habitat A

IMAGE: Steve W. Pope

Southern right whale

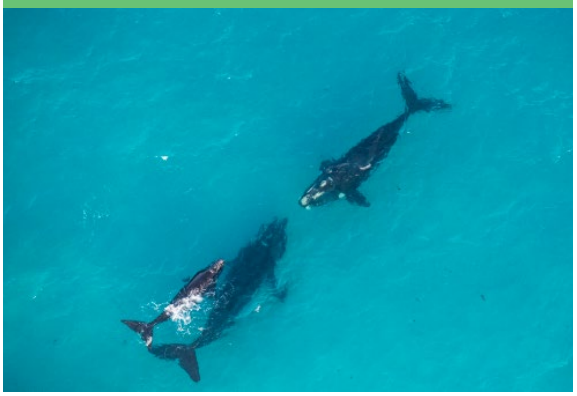

IMAGE: Peta North

Habitat b

IMAGE: Geoff Spanner

Cassowary

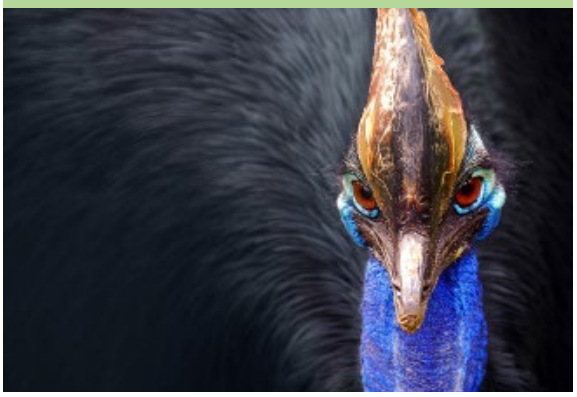

IMAGE: Kerry Trapnell

Habitat c

IMAGE: Michaela Pyne