

YELLAGONGA WETLAND ECOLOGY EDUCATION RESOURCE

ACSS U112 Biological Sciences, Science Understanding: Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions.



Elaborations

- Using scientific conventions for naming species.
- Using food chains to show feeding relationships in a habitat.
- Constructing and interpreting food webs to show relationships between organisms in an environment.
- Classifying organisms of an environment according to their position in a food chain.
- Investigating the effect of human activity on local habitats, such as deforestation, agriculture or the introduction of new species.
- Exploring how living things can cause changes to their environment and impact other living things, such as the effect of cane toads.

Teaching Points

- Producers, consumers, decomposers.
- Arrows in a food chain point in the direction the energy is flowing – towards the animal who is consuming.
- Producers are always first in a food chain or at the bottom of a food web.
- New species to Yellagonga – foxes, feral cats, eastern corellas, pigeons, rabbits, domestic fowl, weeds/grasses.
- The effect of new species: predation, competition for space, nutrients, nesting sites.

Pre-excursion

- Classification
 - Look at classification using hierarchical systems such as kingdom, phylum, class, order, family, genus, and species. This will also meet Biological Sciences, Science Understanding: there are differences within and between groups of organisms: classification helps organise this diversity (ACSSU111).
- Discuss food chains and webs – refer to **Year Seven Science: Food chains and webs – Teacher Information**.
- Review Producers, Consumers and Decomposers (see also **Year Four Science: Who Eats Who? Activity Sheet**).
- Guest Speaker – invite someone to speak to the class with good knowledge of Yellagonga Regional Park e.g. from the City of Joondalup, Friends of Yellagonga or the Department of Parks and Wildlife.

During the excursion

- Use the **Year Seven Science: Species of Yellagonga Activity Sheet**
- Refer to Year Six Science activity sheets for other possible resources.



Post-excursion

- Research the diets of animals in Yellagonga Regional Park. Construct food chains and food webs using this information.
- Look into the environment issues of the Park. Construct a Conservation Management Plan outlining how you could manage one particular issue. For comprehensive information about environmental issues of, and management strategies for Yellagonga Regional Park, refer to the *Yellagonga Integrated Catchment Management Plan 2009-2014* and the *Yellagonga Regional Park Management Plan 2003-2013*. Use the internet and university libraries to seek simple guides on how to write a Conservation Management Plan.

References

<http://www.joondalup.wa.gov.au/Live/Environment/Biodiversity/WetlandZone.aspx>



FOOD CHAINS AND WEBS

Food Relationships in Ecosystems

All energy in our ecosystem originally comes from the sun. Plants capture this energy by photosynthesis. Animals can get this energy by eating plants or animals that eat plants. Animals release the energy from food by respiration to the system by decomposers.

Autotrophs/Producers – living thing that make their own food.

Heterotrophs/Consumer – living things do not make their own food.

Decomposers – breakdown dead living things into small particles.

Food Chains:

Producer → 1st order Consumer → 2nd Order Consumer → Top Consumer
(Plants) Herbivores Omnivores and Carnivores usually Carnivores

Arrows show the direction the energy moves.

Grass → Grasshopper → Bobtail → Eagle

Food webs are basically many food chains put together. A plant or animal can have more than one arrow connecting to another organism. Seek a good food web example design and consider where species of Yellagonga Regional Park fit into the food web.

References

http://www.gould.edu.au/foodwebs/kids_web.htm

<http://www.environment.nsw.gov.au>

NAME

STUDENT ACTIVITY

SPECIES OF YELLAGONGA ACTIVITY

Use the information signs around Neil Hawkins Park to complete the table below. You will need to research back at school to complete the shaded boxes.

Common name	Scientific Name	Nyungar name	Other
Jointed Rush			
Broad Twig Sedge			
Native Wisteria			
Purple Tassels			
Swamp Paperbark			
Sandplain Zamia			
Grass Tree			
Prickly Moses			
Banksia			
Long-necked (Oblong) Turtle			
Pelican			
Moaning Frog			
Eurasian Coot			
Possum (Brushtail)			
Carnaby's Cockatoo			
Blue-billed Duck			
Western Grey Kangaroo			



Introduced Species

An introduced species is a plant or animal that lives in an area which is not its natural habitat.

Can you think of some introduced species found in Australia?

How do you think they got here?

In Yellagonga Regional Park there are a number of plants and animals that are introduced including Couch grass, Wild Oat, Cape Tulip, Foxes, Cats, Rabbits, Eastern Corella, Pigeons and Rainbow Lorikeet.

Go to the grassed area on the hill near the toilet block at Neil Hawkins Park. Find a place to sit quietly and observe the birds there.

What type of birds do you see?

Which birds are the most abundant?

Are these birds native to Western Australia?

How do they affect the native birds in the area? (Why are they a problem?)

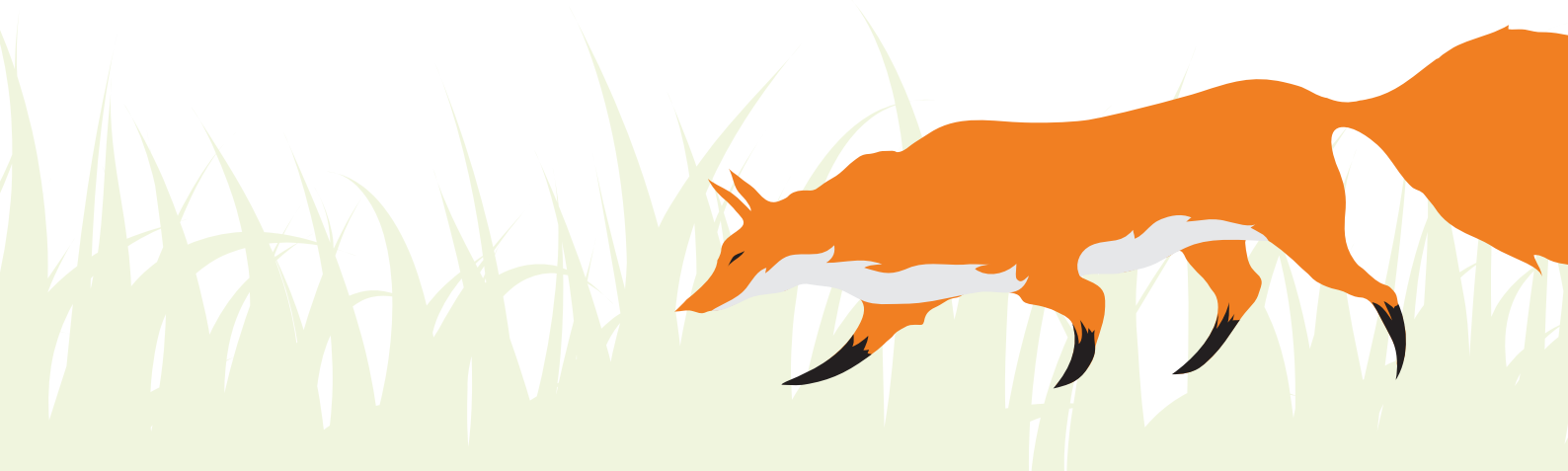


Foxes and Cats (feral and domestic) are very real problems for our native wildlife. What do they do that has a big impact on the environment?

Foxes really enjoy eating turtle eggs. They dig them up out of their safe burrow in the sand. You can see evidence of this along the paths (look for broken shells). What is the problem with foxes eating turtle eggs?

Walk down a short way along the northern path from Neil Hawkins Park. What type of plants do you see growing? How many weeds do you see?

Why are weeds like grass an issue in the Park?



SPECIES OF YELLAGONGA



Use the information signs around Neil Hawkins Park to complete the table below. You will need to research back at school to complete the shaded boxes.

Common name	Scientific Name	Nyungar name	Other
Jointed Rush	<i>Baumea articulata</i>	Waakal Ngarnak	Woven into baskets and mats, used as string
Broad Twig Sedge	<i>Baumea preissii</i>	Waakal Ngarnak	
Native Wisteria	<i>Hardenbergia comptoniana</i>	Koorla	Green stems used as string
One sided Bottlebrush	<i>Calothamnus quadrifidus</i>	Kwowdjard	Blossoms used as a source of honey
Purple Tassels	<i>Sowerbaea laxiflora</i>		Root tubers can be eaten
Swamp Paperbark	<i>Melaleuca raphiophylla</i>		Roofing material for mia mia, used to carry water or food
Sandplain Zamia	<i>Macrozamia fraseri</i>	Djiridji	Separate male and female plants – females have pineapple shaped cones at the base
Grass Tree	<i>Xanthorrhoea preissi</i>	Balga	Fronds (mindarie) used as roofing material
Prickly Moses	<i>Acacia pulchella</i>		Used wood to make digging sticks (wana), shields
Banksia	(Seven species in Yellagonga Regional Park)		Seven Banksia species can drink nectar
Long-necked (Oblong) Turtle	<i>Chelodina colliei</i> formerly <i>oblonga</i>		
Pelican	<i>Pelecanus conspicillatus</i>		
Moaning Frog	<i>Helioporous eyrie</i>		
Eurasian Coot	<i>Fulica atra</i>		
Possum (Brushtail)	<i>Trichosurus vulpecula</i>	Koomal	Hunted for food by Nyungar people
Carnaby's Cockatoo	<i>Calyptorhynchus latirostris</i>		
Blue-billed Duck	<i>Oxyura australis</i>		
Western Grey Kangaroo	<i>Macropus fuliginosus</i>	Yonga	Hunted for food by Nyungar people