

# EXPLORING COASTAL FOOD WEBS

One of the essential resources all living things need to survive is food. Food not only provides living things with energy, but also the building blocks for growth, development, healing and overall maintenance of body functions. In turn, it is the role of some living things to produce their own energy (plants and chemosynthetic organisms), or consume others.

In this activity you will learn more about the diversity of species found within our coastal marine (sea-based) and terrestrial (land-based) ecosystems, and the roles they play in native food webs.

## Activity 1: Food Web Glossary

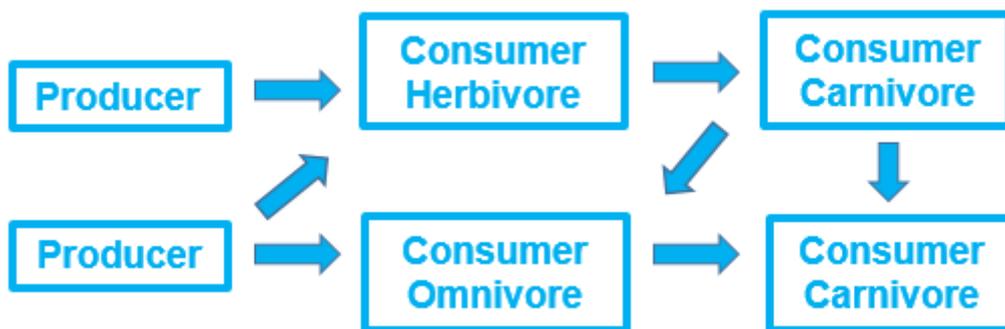
Complete the glossary below using the online resources.

FOOD WEB GLOSSARY	
Term	Definition
Food chain	
Food web	
Producer	
Consumer	
Decomposer	
Herbivore	
Carnivore	
Omnivore	
Marine	
Terrestrial	
Predator	
Prey	

## Activity 2: Creating coastal food webs

Using species from the list below, create a food web, including:

- At least one producer and two consumers from the Native Coastal Species list
- What other species consume or are consumed by your chosen species?  
Add at least three additional species to each food web.
- Label their role in the food web eg. producer, consumer, top predator
- For consumers label feeding habit (herbivore, carnivore, omnivore)
- Use arrows to show the flow of energy between species
- Don't forget to use the Online Resources on page 4 to help with your research.



### NATIVE COASTAL SPECIES

#### TERRESTRIAL SPECIES

##### Producers

Southern Spider Orchid *Caladenia australis*  
Bearded Heath *Leucopogon parviflorus*

Ironbark Gum *Eucalyptus tricarpa*  
Moonah *Melaleuca lanceolata*

##### Consumers

Blue Wren *Malurus cyaneus*  
Blotched Blue Tongue *Tiliqua nigrolutea*  
Boobook Owls *Ninox boobook*  
Tiger Snake *Notechis scutatus*  
Australian Magpie *Gymnorhina tibicen*  
Swamp Wallaby *Wallabia bicolor*  
Powerful Owl *Ninox strenua*

Greengrocer Cicada *Cyclochila australasiae*  
Black-shouldered Kite *Elanus axillaris*  
Yellow-bellied Glider *Petaurus australis*  
Swamp Antechinus *Antechinus minimus*  
Nankeen Kestrel *Falco cenchroides*  
Ghoul Fungus *Hebeloma aminophilum*  
Southern Water-skink *Eulamprus tympanum*

#### MARINE SPECIES

##### Producers

Neptunes Necklace *Hormosira banksia*  
Sea Lettuce *Ulva lactuca*

Bull Kelp *Durvillaea potatorum*  
Phytoplankton

##### Consumers

11 armed Seastar *Coscinasterias calamaria*  
Little Penguin *Eudyptula minor*  
Great White Shark *Carcharodon carcharias*  
Hooded Plover *Thinornis rubricollis*  
Mako Shark *Isurus oxyrinchus*  
Checkerboard Shell *Cominella lineolata*  
Southern Eagle-ray *Myliobatis australis*

Soldier Crab *Mictyris longicarpus*  
Giant Cuttlefish *Sepia apama*  
Elephant Snail *Scutus antipodes*  
Blue-ringed Octopus *Hapalochlaena*  
Southern-right Whale *Eubalaena australis*  
Yellowtail Kingfish *Seriola lalandi*  
Weedy Seadragon *Phyllopteryx taeniolatus*

## Activity 3: Exploring coastal food webs

Use the Online Resources on the following page and your own textbooks and research to answer the following questions about your food webs

1. What role does each species play in your food web? Eg. producer, consumer, predator, prey, decomposer

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2. Focusing on one species from your food web, what impact would the removal or extinction of this species have on the other species in the food web?

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3. Choosing a different species to focus on, list the potential impacts of an increase or overpopulation of this species on the food web.

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4. Which of your species are currently impacted by threats such as introduced species, habitat loss or other human impacts? What can be done to prevent or remove this impact and protect the food web?

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## Online Resources

### Native Coastal Flora & Fauna

Surfcoast Nature Search

<https://scnaturesearch.com.au/>

ANGAIR Fact sheets

<https://www.angair.org.au/knowledge-bank/factsheets>

City of Greater Geelong: Coastal Indigenous Plants

<https://www.geelongaustralia.com.au/indigenousplants/article/item/8ce6ce93a7706fc.aspx>

Geelong Native Plants Nursery

<https://www.geelongnativeplants.com.au/>

ANGAIR Fact sheets (Anglesea, Aireys Inlet Society for the Protection of Flora and Fauna)

<https://www.angair.org.au/knowledge-bank/factsheets>

Royal Botanic Gardens: VICFLORA

<https://vicflora.rbg.vic.gov.au/flora/bioregions/otway-plain>

### Introduced Flora & Fauna

Surfcoast Shire: Weeds of the Surf Coast Shire

<https://www.surfcoast.vic.gov.au/files/assets/public/05-environment/natural-spaces/flora-and-fauna/weeds-of-the-surf-coast-shire.pdf>

Environmental Weeds: Invaders of the Surf Coast Shire

<https://www.angair.org.au/images/stories/angair/weeds/2010%20weed%20book.pdf>

ANGAIR Fact sheets (Anglesea, Aireys Inlet Society for the Protection of Flora and Fauna)

<https://www.angair.org.au/knowledge-bank/weed-posters>

Agriculture Victoria: Pests, diseases and weeds

<http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds/pest-animals/invasive-animal-management/established-invasive-animals/integrated-rabbit-control-for-rural-and-natural-landscapes>

GORCC Blog

<https://gorcc.org/category/pests-2/>

PestSmart; Centre for Invasive Species Solutions

<https://www.pestsmart.org.au/>

Agriculture Victoria: Pests, diseases and weeds

<http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds/pest-animals/invasive-animal-management/established-invasive-animals/integrated-rabbit-control-for-rural-and-natural-landscapes>

Department of Agriculture, Water and the Environment: Feral animals in Australia

<https://www.environment.gov.au/biodiversity/invasive-species/feral-animals-australia>

## Teachers Notes & Curriculum Links

This resource has been designed to cater for year 7 through to VCE students, and is designed to be used after introductory sessions on the definition of food chains and food webs. It can be completed as an individual or small group, with students producing either a written or aural presentation, or combination of both. To extend the program, students can create both a terrestrial and marine food web, and work towards linking the food webs from these two ecosystems.

### VICTORIAN CURRICULUM LINKS

#### LEVELS 7 & 8

##### Science Understanding: Biological Sciences

Interactions between organisms can be described in terms of food chains and food webs and can be affected by human activity (VCSSU093)

##### Elaborations

- constructing and interpreting food chains and foodwebs to show relationships between organisms in an environment
- researching examples of human impacts on specific ecosystems, for example, the use of fire by traditional Aboriginal people, the effects of palm oil harvesting, deforestation, agricultural practices or the introduction of new species

#### LEVELS 8 & 9

Ecosystems consist of communities of interdependent organisms and abiotic components of the environment, matter and energy flow through these systems (VCSSU121)

- exploring interactions between organisms, for example, predator/prey, parasites, competitors, pollinators and disease vector

#### VCE

##### Biology: Unit 1 – Area of Study 2:

How do living systems sustain life?

##### Outcome 2.

Explain how various adaptations enhance the survival of an individual organism, investigate the relationships between organisms that form a living community and their habitat, and analyse the impacts of actors that affect population growth.