

## YELLAGONGA WETLAND ECOLOGY EDUCATION RESOURCE

**ACSS U094** Biological Sciences, Science Understanding: The growth and survival of living things are affected by the physical conditions of their environment.

**ACSH E099** Science as a Human Endeavour, Nature and Development of Science: Important contributions to the advancement of science have been made by people from a range of cultures.



### Elaborations

- Investigating how **changing the physical conditions for plants** impacts on their growth and survival such as salt water, use of fertilisers and soil types.
- Considering the effects of **physical conditions causing migration and hibernation**.
- Learning how **Aboriginal and Torres Strait Islander knowledge, such as the medicinal and nutritional properties of Australian plants**, is being used as part of the evidence base for scientific advances.

### Teaching Points

- Plant requirements for growth; water, sunlight, nutrients (carbon dioxide, nitrogen, minerals).
- Migration:
  - definition
  - causes
  - examples of migratory birds found at Yellagonga.
- Hibernation/Aestivation
  - definition
  - causes/triggers
  - examples of animals that aestivate at Yellagonga.

- Nyungar seasons.
- Nyungar uses for plants and animals.

### Pre-excursion

- Investigation: grow seedlings in different conditions e.g. salty water vs tap water, differ the amount of nutrients (fertiliser), differ the type of soil (clay versus beach sand).
- Research what plants need to survive. How does this differ in different environments?
- Research hibernation versus aestivation. Complete the **Hibernation or Aestivation Activity Sheet**.
- Learn about Nyungar plant use of Yellagonga Regional Park using Plants and People in Mooro Country: Nyungar Plant Use in Yellagonga Regional Park.

### During the excursion

- **So you want to be a Twitcher Activity Sheet.**
- **Migratory Birds Teacher information.**
- **Nyungar Seasons Activity Sheet.**

### Post-excursion

- Create a tracking of the path of a migratory bird found at Yellagonga (e.g. Black-winged Stilt).
- Research the breeding cycle of the Carnaby's Black-Cockatoo also known as Short-billed Black-Cockatoo.

### References

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



# MIGRATING BIRDS

## Definition

“The periodic seasonal movement of birds from one geographic region to another, typically coinciding with available food supplies or breeding seasons.”

“Migratory water-birds include species such as plovers, sandpipers, stints, curlews and snipes. These incredible birds make round trip migrations of up to 26,000 km each year between their breeding grounds in the northern hemisphere and their non-breeding areas in the south. These trips are made in several weeks, with brief stops at staging sites along the way to rest and refuel for the next leg of their journey.

The corridor through which these water-birds migrate is known as the East Asian – Australasian Flyway (the Flyway). It extends from within the Arctic Circle, through East and South-east Asia, to Australia and New Zealand. Stretching across 22 countries, it is one of eight major water-bird flyways recognised around the globe.”

## References

<http://birding.about.com/od/birdingglossary/g/migration.htm>

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

[http://www.worldmigratorybirdday.org/2007/index.php?option=com\\_content&view=article&id=10&Itemid=4](http://www.worldmigratorybirdday.org/2007/index.php?option=com_content&view=article&id=10&Itemid=4)

<http://www.eaaflyway.net/>

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

<http://www.naturia.per.sg/buloh/birds/migration.htm>

NAME

STUDENT ACTIVITY

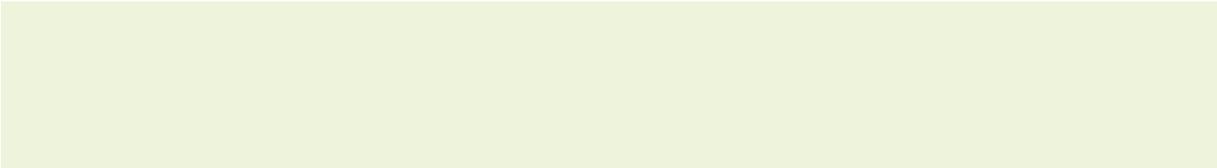
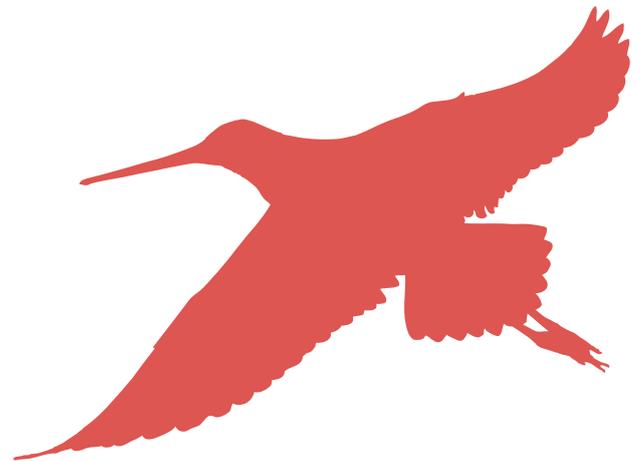
# HIBERNATION OR AESTIVATION?



	Hybernation	Aestivation
Definition		
Characteristics		
When does it occur?		



	Hybernation	Aestivation
What causes the animal to hibernates or aestivate?		
What does the animal do?		
Examples		





NAME

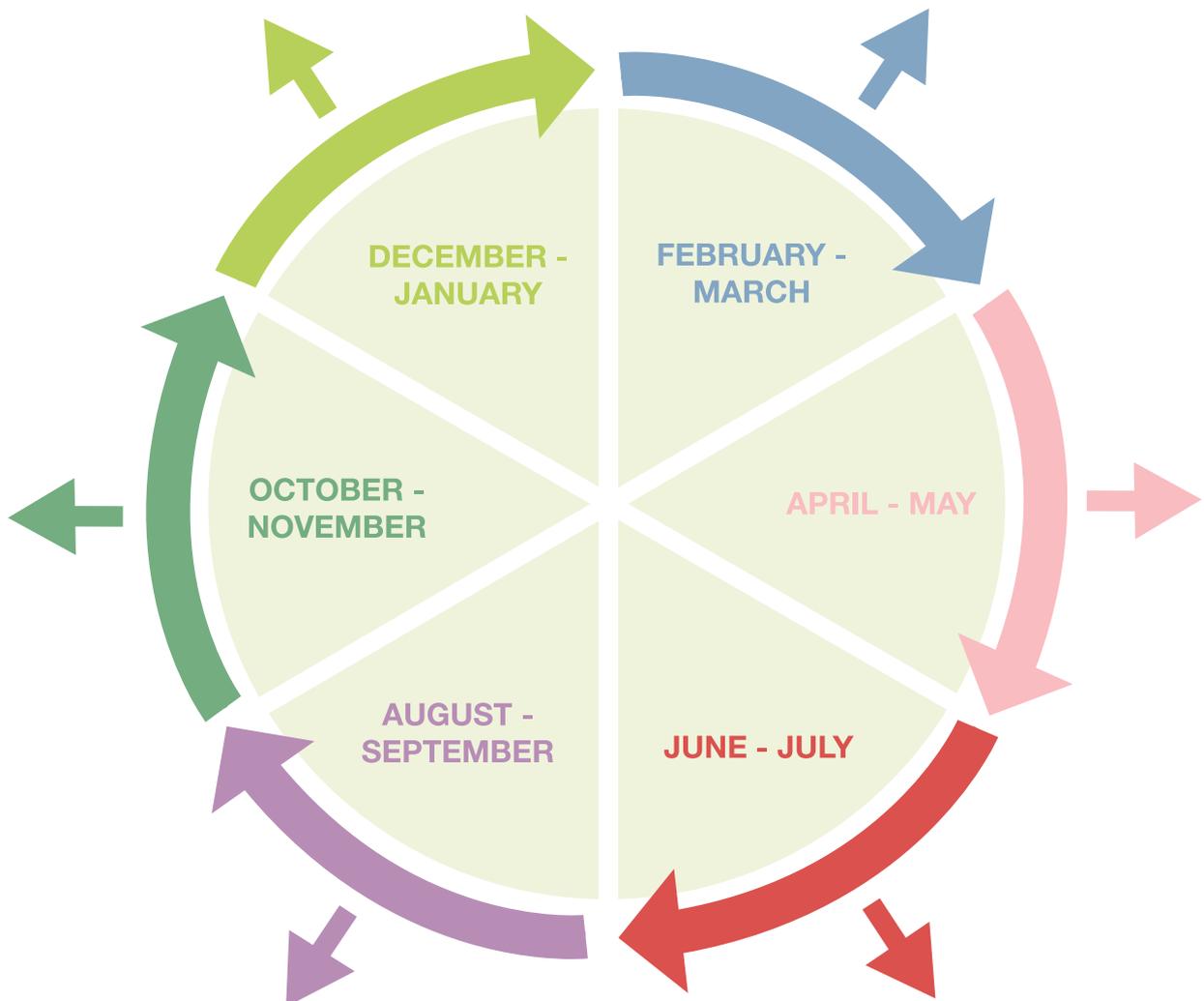
STUDENT ACTIVITY

## NYUNGAR INTERPRETIVE SIGNAGE AT NEIL HAWKINS PARK



### Nyungar Seasons

Find the sign titled “Nyungar Seasons” at Neil Hawkins Park. Use the information on the sign to complete the graphic below. Be sure to write in the Nyungar name for the season, the weather at that time and what is happening with the plants and animals.





## The Nyungar People and Yellagonga

Use the information signs around Neil Hawkins Park to answer these questions.

What did the Nyungar people call rushes and sedges?

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What were rushes and sedges used for?

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Eucalyptus leaves have a strong smell.  
How did the Nyungar people use this plant?

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Who was Yellagonga named after?

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What is the Nyungar word for native wisteria? What can it be used for?

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The One-sided Bottle brush is also called \_\_\_\_\_ by the Nyungar people.

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What did the Nyungar people use it for?

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What does Lake Joondalup mean?

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Name two uses for the Swamp Paperbark tree.

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a.

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b.

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What is the Nyungar word for the Sandplain Zamia?

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Approximately how long had Nyungar people been living in the area before European people?

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What part of the lily was eaten by Nyungar people?

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Name four ways lilies are eaten.

a.

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b.

---

c.

---

d.

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What are yonga and koomal?

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What is the other name for the Balga?

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What does 'mindarie' mean?

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What is a 'wanna'? What is it made from?

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Which plant could you make a sweet drink from?

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## NYUNGAR INTERPRETIVE SIGNAGE AT NEIL HAWKINS PARK

**Nyungar Seasons**

Find the sign titled "Nyungar Seasons". Use the information on the sign to complete the graphic below. Be sure to write in the Nyungar name for the season, the weather at that time and what is happening with the plants and animals. Make use of the whole page.

**Refer To Nyungar Seasons Sign****The Nyungar People and Yellagonga**

Use the information signs around the park to answer these questions.

1. What did the Nyungar people call rushes and sedges? **Waakal Ngarnak**
2. What were rushes and sedges used for? **Baskets, mats, string**
3. Eucalyptus leaves have a strong smell. How did the Nyungar people use this plant?  
**Rub leaves between hands and inhale to clear nasal passages**
4. Who was Yellagonga named after? **Important Nyungar Elder**
5. What is the Nyungar word for native wisteria? What can it be used for? **Koorla, string**
6. The One-sided Bottle brush is also called Kwowdjard by the Nyungar people. What did the Nyungar people use it for? **Honey from the flower**
7. What does Lake Joondalup mean? **'Place of Whiteness' or Glistening Water'**
8. Name two uses for the Swamp Paperbark tree.
  - a. **Roofing material for mia mia**
  - b. **Carry food or water**
9. What is the Nyungar word for the Sandplain Zamia? **Djiridji**
10. Approximately how long had Nyungar people been living in the area before European people? **40,000 years**
11. What part of the lily was eaten by Nyungar people? **Bulb**
12. Name four ways lilies are eaten.
  - a. **Raw**
  - b. **Steamed**
  - c. **Roasted**
  - d. **Rolled in ash**
13. What are yonga and koomal? **Kangaroo and possum**
14. What is the other name for the Balga? **Grass tree**
15. What does 'mindarie' mean? **Fronde of the Balga**
16. What is a 'wanna'? What is it made from? **Digging stick, Acacia wood**
17. Which plant could you make a sweet drink from? **Banksia**