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Hi Lisa Wright

Wanju (welcome)

Welcome to 2018 and the latest issue of *Nearer to Nature* News, where you can find the latest nature-based education news and events in the Perth area and surrounds.

In Term 4 I attempted the Munda Biddi Track from Mundaring to Albany. Let's just say things didn't go as planned. In two weeks there was only one fine day, the rest ranged from overcast to rain with cool to cold temperatures the whole time, not the best for riding. So at Donnelly River I stopped. Half way (530Km) is still a good effort. The plan is to finish the southern half sometime this year.

Botanic Gardens and Parks Authority, Perth Zoo and Rottnest Island Authority as part of the new department. As we work through the integration process of the different functions and roles offered by the agencies some changes may occur. In education we are working with the other agencies to identify opportunities for growth and collaboration.

High schools received the 2018 brochure in term three last year. It can be downloaded from our website. For Primary Schools the 2018 Brochure will be emailed out in early February.

Some old excursions have been taken off the program while other excursions have been tweaked to better suit the curriculum and/or requests from teachers. Hopefully you can find an excursion or incursion that meets your needs.

Mr C



Photo: Steve Crane talks to students.

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Bunuru – season of adolescence or the second summer

Bunuru (February – March) is the hottest time of the year with little to no rain; a time of coastal living and fishing. Hot easterly winds continue with a cooling sea breeze

and crabs made up a large portion of the diet as Noongar people moved between the ocean and lake systems. Fish such as tailor and mullet were trapped in shallow water and easily caught, while marron, gilgies, kooyal and tortoises were collected from wetlands.



Bunuru is also a time of the white flowers with lots of white flowering gums in full bloom, including Jarrah, Marri and Wandoo.

Why not join Nearer to Nature on a cultural excursion to explore more about how Aboriginals lived sustainably?

Our flora survives our long, hot, dry summers. Large trees like the jarrah (*Eucalyptus marginata*) have deep root systems that penetrate down to stored water. But how do our shallow rooted shrub species survive?

They can't walk, run or fly off to a more suitable habitat when things get tough. Plant leaves typically have genetically identical cells, however different conditions cause different genes in leaf formation to be turned on or off. Entire species have accumulated survival characteristics common to that species.

Many of our native shrub species have tiny or spikey reduced leaves. Reduction in leaf size reduces surface area and water loss. They also have sunken stomata (as protection from the wind and sun) that they can close to regulate water loss. However, transpiration also acts as evaporative cooling. So, if transpiration is reduced the leaves can overheat and die. To compensate, plants have a thick, tough leaf cuticle to help keep them cool.

The Winged Wattle (*Acacia alata*) has no leaves at all. Instead the petioles have extended and flattened to look and perform like leaves.



Right: Winged wattle in front of a Marri at the Perth Hills Discovery centre

Come [join us to learn more](#) about the amazing survival adaptations of our native

Nuytsia floribunda – WA's Christmas tree

Need an engaging Geography activity? Geoguessr (<https://geoguessr.com/>) gives participants a photo that can be rotated 360⁰, by looking at features students guess where the photo was taken in the world.

Which side of the road are cars on? What is the landscape like – coastal, plains, mountains? What is the vegetation – tropical, deciduous trees, agricultural, palm fringed sea? Do the cultural features indicate a developed or less developed country? What language are signs written in? The photos contain all sorts of clues that help “place” the photo in the world. Guess where the photo was taken and then compare it to actual location.



This free resource can be played solo or challenge format, see who can score the most points! There are a wide range of maps to choose from allowing you to focus in

Above: A scene from the Geoguessr solo challenge

Living in dry wetlands

We all have different strategies for surviving a long hot summer; the beach, air-con, swimming pools. But what about those wetland invertebrates whose home simply evaporates? The wetlands of the south-west go through a natural cycle of drying and flooding and their inhabitants have some nifty strategies to survive.

There are two main strategies: either stay or go! The creatures that stay include molluscs that can seal their shells and seek refuge in damp mud, or crayfish that can burrow up to two meters into moist mud and survive there for several years. Most of the tiny creatures like copepods, seed shrimps or water fleas produce drought resistant eggs that hatch when the wetland re-fills.



Above: Picnic Cove, Lake Joondalup, in a dry year. Photo - Gary Tate.

Then there are the ‘goers’; those invertebrates that have the ability to migrate. Creatures like water beetles use their wings to disperse to areas of permanent water. Others like water mites attach to aerial insects before they leave the water and disperse that way. Some insects, such as dragonflies use a combination of both strategies; drought resistant eggs and dispersal.

Wetlands are fascinating places at any time of year, although Spring is the ideal time to explore them in a [Nearer to Nature wetlands program](#).

Main Roads will again be doing safety upgrades on the Great Eastern Highway during 2018. The section involved extends from Bilgoman Pool just before the top of the range to Seaborne Sreet near Mahogany Creek, a total of over 5Km. From last years' experience I would anticipate the work will take all year.



This will unfortunately increase your travel time to the Perth Hills Discovery Centre. For buses there is no quick alternate route. Going via Kalamunda will most probably take longer than getting delayed. We will adjust start and finish times of excursions to suit.



If you would like to contact us, provide feedback or are experiencing problems opening stories please email the Nearer to Nature Team at n2n@dbca.wa.gov.au.

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