



# BUSHLAND NEWS

*KATANDRA BUSHLAND SANCTUARY NEWSLETTER  
Autumn 2021*

The summer rains have continued into autumn. The soaked ground and some high winds have seen a couple of trees come down over the past months. One large tree fell across the walking track beside the boardwalk which crosses one of our creeks, luckily missing the boardwalk by inches. It will be quite a task to clear it away from the track.

The Katandra workday scheduled for March was washed out due to wet weather. This was to be the first official workday since the Covid pandemic began last year. Hopefully now that many of the restrictions have been eased, workdays will be able to go ahead from now on as usual, the 3<sup>rd</sup> Sunday of the month as shown on page 4 of this newsletter. If you are able to help, your presence would be most appreciated, even if only for an hour or two. Please email or call (0431857407) in advance if you intend to come along and help on any of these days.

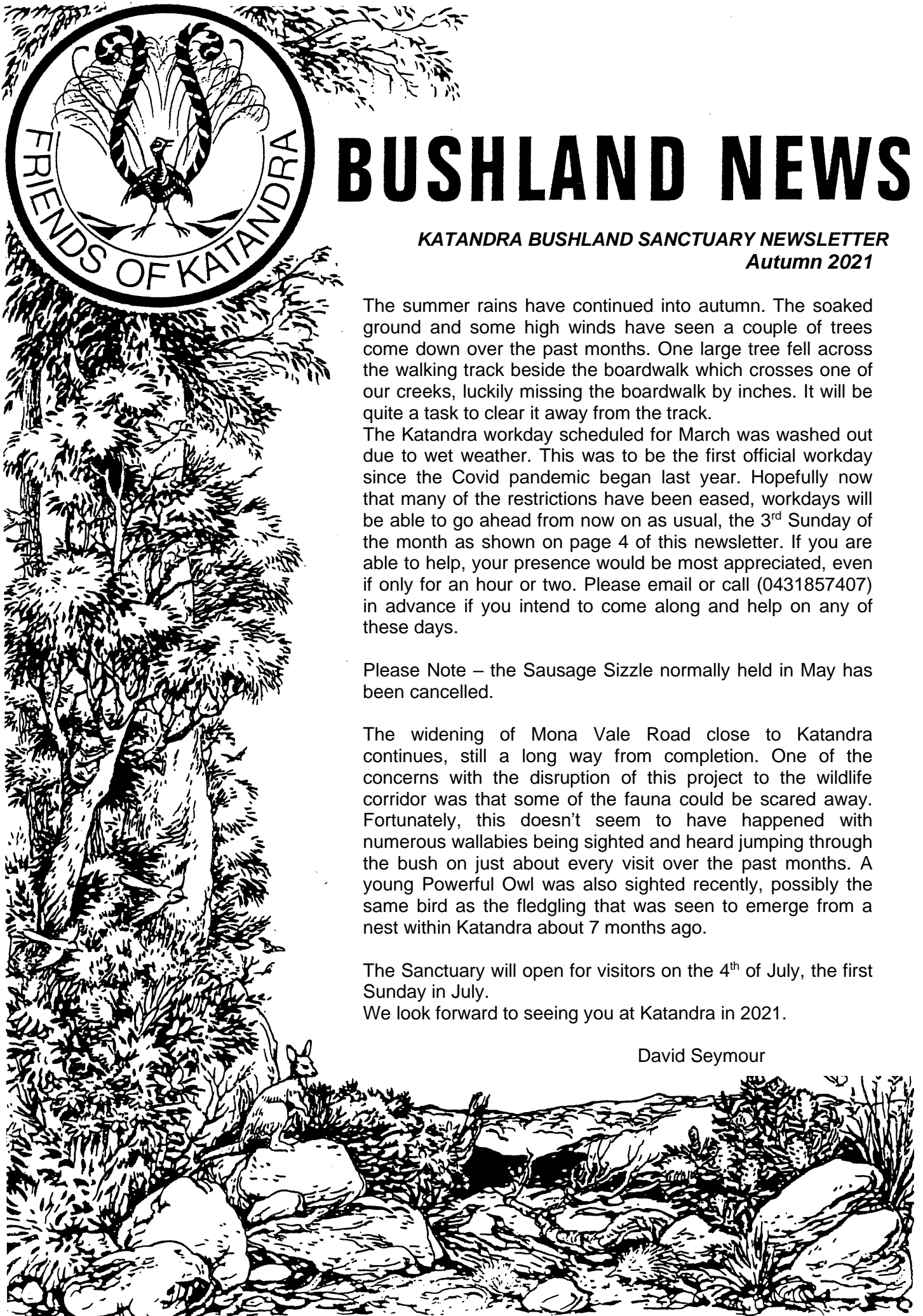
Please Note – the Sausage Sizzle normally held in May has been cancelled.

The widening of Mona Vale Road close to Katandra continues, still a long way from completion. One of the concerns with the disruption of this project to the wildlife corridor was that some of the fauna could be scared away. Fortunately, this doesn't seem to have happened with numerous wallabies being sighted and heard jumping through the bush on just about every visit over the past months. A young Powerful Owl was also sighted recently, possibly the same bird as the fledgling that was seen to emerge from a nest within Katandra about 7 months ago.

The Sanctuary will open for visitors on the 4<sup>th</sup> of July, the first Sunday in July.

We look forward to seeing you at Katandra in 2021.

David Seymour



## Fabaceae – the “pea” family

The Fabaceae family is the third largest family of flowering plants, consisting of over 700 genera with around 20 000 species world-wide. Only Orchidaceae - the orchid family, and Asteraceae – aster family, are larger. Often referred to as the



pea or legume family, Fabaceae can be recognised by their pod-shaped fruit, called a legume, consisting of a pericarp (shell) covering a row of seeds. These pods occur in a range of shapes and sizes. Fabaceae species are important

environmentally as they are able to “fix” nitrogen directly from the air. This occurs in nodules on the roots of the plant with the aid of soil bacteria (Rhyzobia). Nitrogen from the air is converted into



ammonia which can be metabolised by the plant. When the plant dies, the fixed nitrogen is released to the soil making it available to other plants. This ability to fix nitrogen allows Fabaceae species to grow well in nutrient poor soils and to compete well with other plants.

Root nodules

Nitrogen is an important nutrient for plants, being

one of the major elements required along with phosphorus and potassium. Nitrogen is an essential part of the proteins in plant cells, the green pigment chlorophyll and it is extremely important for leaf growth. Even though air is almost 80% nitrogen gas, plants are not able to use nitrogen in its elemental gaseous form. The nitrogen must first be “fixed” into suitable compounds for it to be accessible. This can also

be done when lightning occurs in the atmosphere causing nitrogen to combine with oxygen. The resulting compounds then fall to the ground dissolved in raindrops. Nitrogen compounds are usually water soluble and so easily leached from soil, so this supply of fixed nitrogen must be continually replenished. Soil bacteria can help return nitrogen to the soil in useable form by breaking down and recycling organic matter that has fallen from dead or dying plants.

Many Fabaceae species occur in areas of Australia where bushfires are common such as dry forests and woodlands. In these habitats they may act as "pioneer" species, quickly recolonizing burnt-out areas and then being gradually replaced by other species in the plant community. They are often helped in this role by ants which store the seeds underground.

These seeds are also rich in proteins and provide an important food source for insects, animals and humans. Agriculturally important legumes, including chickpeas, soyabean, peanuts and other common peas and beans, are cultivars developed from Fabaceae species originating from places such as Central and South America, India, Japan and west Africa thousands of years ago.

Although no Australian member of this family has been seriously exploited as a food crop, some have been important as food for both aborigines and for the early European colonists. However, as some of the latter found, to their cost, many of the native "peas" are also toxic unless the seed is prepared correctly. For example, seeds of the Black Bean Tree (*Castanospermum austral*) are toxic when eaten raw and so need to be prepared by roasting (the heat destroys the toxins) or soaking in water (leaching out the toxins). The toxic properties of some species have also had an impact on agriculture by poisoning livestock.

**Fabaceae** plants are generally divided into three main subfamilies – *Faboideae*, *Mimosoideae* and *Caesalpinioideae*, although in the past these latter two groups have sometimes been considered separate families in their own right.

**Faboideae** – These are the species with what is considered to be the “typical” pea-shaped flowers. Of about 12000 species (in 500 genera) world-wide, Australia has nearly 1100 species in 136 genera, 18 of which have been recorded as occurring in Katandra. They are found in every state and territory of Australia, from coastal cliffs



*Hovea linearis*



*Platylodium formosum*

standard  
keel  
wings

to alpine areas, from the tropics to the arid inland. The flowers have 5 free petals - a broad erect 'standard' usually with markings to guide insects, two narrow 'wings' and a 'keel' of two tightly clasped petals which enclose the sexual parts (the male stamen and female carpel). Pea flowers produce little or no scent. With the male and female parts clasped close together in the 'keel', many flowers self-fertilise and so do not need to expend energy attracting a lot of insects.



*Pultenaea daphnoides* & *Pultenaea flexilis*, two of the 18 Faboideae species found in Katandra

**Mimosoideae** – of about 3000 species (in 60 genera) world-wide, Australia has nearly 960 species in 17 genera. These include the Acacias (wattles) of which there are 7 recorded as occurring in Katandra.

**Caesalpinioideae** – there are between 2500 - 3000 species (in 150 genera) world-wide occurring mainly in tropical and sub-tropical regions. About 85 species in 19 genera occur in Australia, none of which are recorded as occurring in Katandra. This family includes the Sennas, one of which is the yellow flowered exotic *Senna pendula* from South America (often called cassia or winter senna – see left) which occurs as a weed throughout many parts of the Northern Beaches.



### The Southern Cross in 3D

There have been a lot of changes occurring around Katandra in recent years, the widening of Mona Vale Road being one example. One thing that has not changed much recently is the night sky high above the bushland. At this time of year, the Southern Cross rises early in the evening and is easily seen for most of the night – the same as it has for a long, long time. The Southern Cross is the common name given to the constellation



*The Southern Cross on the Australian flag.*

Crux, the smallest of the 88 modern constellations in the sky.

Stars in a constellation are named using the letters of the Greek alphabet. The brightest star is given the first letter alpha ( $\alpha$ ), the

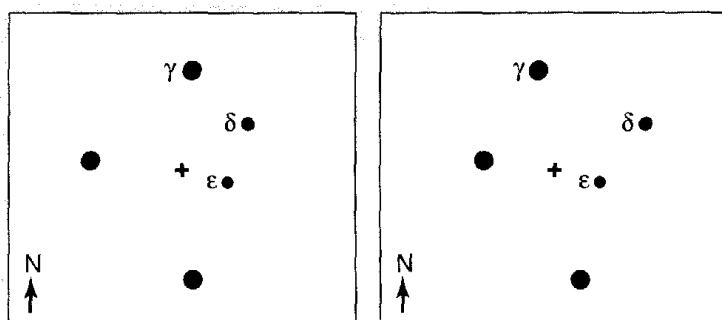
second brightest star is given the second letter beta ( $\beta$ ) and so on. Some bright stars may also have other common names.

The list below shows the five main stars of the Southern Cross with their common name and distance from Earth (in light-years, ly), clockwise from Alpha Crucis, the bottom or most southerly star in the cross. This also happens to be in order of decreasing brightness.

Alpha Crucis ( $\alpha$ ), Acrux – 321 ly  
 Beta Crucis ( $\beta$ ), Mimosa – 352 ly  
 Gamma Crucis ( $\gamma$ ), Gacrux - 88 ly  
 Delta Crucis ( $\delta$ ), Imai – 364 ly  
 Epsilon Crucis ( $\epsilon$ ), Ginan – 230 ly  
*(Note – some of these distances may have been recently revised using updated measurements)*

When we look at the night sky, we see a flat universe. The stars are all so distant that we lose our sense of depth perception. When we see a bright star, we are not sure if it is really so bright or if it is a fainter star that is very close to us. As shown in the list above, the faintest of the five stars is actually the second closest.

The pictures below were published in the 2006 edition of 'Astronomy Australia – a Practical Guide to the Night Sky' by Dawes, Northfield and Wallace. These allow us to see the Southern Cross constellation in 3-dimensions, giving an impression of the relative distances to the stars. Look at the pictures with your eyes 'out of focus' similar to viewing 3D pictures published in some magazines. Ensure that the page is flat and level. (Note – the central cross is just there to help you achieve your 3D focus).



Katandra website: [www.katandra.org](http://www.katandra.org)

### **KATANDRA BUSHLAND SANCTUARY**

Foley's Hill, Lane Cove Rd, Ingleside NSW  
Department of Lands Reserve No 86487  
Founder: the late Harold Alfred Seymour  
Managed by Katandra Bushland Sanctuary Trust.  
Phone: 0431857407

OPEN: Every Sunday: July, August, September,  
October

HOURS: 10 am — 4 pm

ADMISSION: \$3 donation

### **KATANDRA BUSHLAND SANCTUARY TRUST PO Box 365 Mona Vale NSW 1660**

President: David Seymour

Vice-President: David James

Secretary: (acting) David Seymour

Treasurer: Peter Hammond

Minutes Secretary: Julie Emerson

Bushland News Editor: Marita Macrae

Trustees: Roberta Conroy, David Malin

(Cover Design by the late Walter Cunningham)

**Enquiries: phone 0431857407 or by email  
[information@katandra.org](mailto:information@katandra.org)**

### **Volunteers are needed**

If you can assist on maintenance days or with  
welcoming visitors to Katandra on open days,  
please phone 0431857407

### **DIARY DATES 2021**

#### **SAUSAGE SIZZLE (CANCELLED)**

~~Sunday 2nd May, 12 noon~~

#### **FOUNDER'S DAY (to be confirmed)**

**Sunday 15th August, 12 noon**

Bring your lunch to cook on the wood burning  
BBQs. The trust will provide 'dessert', drinks, tea  
and coffee.

#### **CHRISTMAS PARTY (to be confirmed)**

**Sunday 5th December, 4.30 pm**

Cold meats, drinks and salads are provided, but  
please feel free to bring along some sweets or  
savouries to share before or after. Also enter the  
raffle to win one of Ruth's sort-after Christmas  
cakes.

#### **SANCTUARY MAINTENANCE 2021**

(3rd Sunday March–November)

9 am Sunday 21 March

9 am Sunday 18 April

9 am Sunday 16 May

9 am Sunday 20 June

9 am Sunday 18 July

9 am Sunday 19 September

9 am Sunday 17 October

9 am Sunday 21 November

#### **PUBLIC OPEN DAYS 2021**

Each Sunday of July–October

10 am – 4 pm

---

Katandra Bushland Sanctuary Trust  
PO Box 365 Mona Vale NSW 1660