

Summer 2021

# ANGAIR QUARTERLY

BRINGING YOU STORIES FROM THE ANGLESEA, AIREYS INLET SOCIETY  
FOR THE PROTECTION OF FLORA AND FAUNA



Hoodies on the Aireys Inlet Hall

WHAT'S INSIDE:

Christmas flora - 1

Wadurrung Country - 6

Summer Orchids- 12



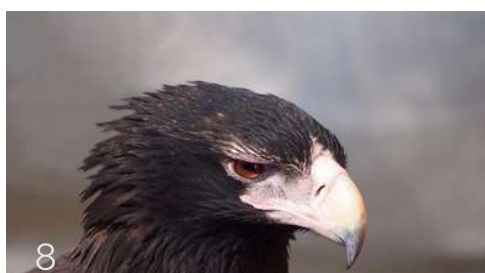
**ANGAIR** Inc.

# ANGAIR QUARTERLY

Summer 2021



3



8



9



12



20

## CONTENTS

---

- 3 What's in a name: Christmas Bush**
- 6 Bird Notes**
- 8 Wadawurrung Country**
- 9 Summer Orchids**
- 11 Discarding Your Skeleton**
- 12 Phytophthora Dieback Q & A**
- 14 Platypus Watch**
- 15 Summer is for Seeds**
- 17 Restoration of a Remnant of Anglesea Heath**
- 20 Alcoa Mine Revegetation**

**ANGAIR Inc.** (R/N A0002974W)

3C McMillan Street, Anglesea, Vic. 3230

Phone: (03) 5263 1085

email: [admin@angair.org.au](mailto:admin@angair.org.au)



### Copyright

Any article or information appearing in this newsletter may be copied to further interest in the conservation of native flora and fauna or in environmental care, provided that the source and contributor(s) are acknowledged..

## WHAT'S IN A NAME? CHRISTMAS BUSH

Neville Millen

The common name, Christmas Bush, is given to several Australian native species that flower in summer, most profusely around Christmas.

The Victorian Christmas Bush, *Prostanthera lasianthos*, is the largest and last-flowering of the Mint-bushes and has a wide distribution from Southern Queensland to Tasmania. However, only Victoria claims it as a Christmas Bush.



Victorian Christmas Bush

The Angair propagation group take cuttings from plants that grow locally, but these probably derive from similar plants in the Otways, where it is a tall forest shrub to 5 m occupying moist shady gullies or slopes of wet sclerophyll forest. The leaves are somewhat floppy and larger than all other *Prostanthera* species, distinctly light green with finely toothed edges (sometimes wavy or curved) with a slight minty smell. Around Christmas time in Victoria, these plants produce abundant showers of white (sometimes light mauve) flowers with distinctive inner blotches of purple and orange. A drive from Deans Marsh to Lorne around Christmas will allow you to see this species punctuating the forest green with displays of white flowers.

If you happen to choose one of these plants at our sales, make sure it is planted in a cool moist area of the garden and receives relief from hot midday sun. A smaller shrubby variant, *Prostanthera lasianthos* var. *subcoriacea*, occurs in the Grampians and has similar flowers, but smaller, smooth, thick leaves.

The Tasmanian Christmas Bush is the *Bursaria spinosa*, a species related to the Pittosporum family and has scented cream sprays of flowers and distinctive seed vessels that turn from green to bronze. The species occurs in Victoria and South Australia, but only Tasmania gives it the Christmas moniker.



Tasmanian Christmas Bush

It can become a tree, reaching 10 m in the wild. A large *Bursaria* stands within the Angair propagation compound, though it lost half its size to a storm some years ago. We propagate the seed collected from this tree and others in the area. Its spiny habit makes it less loveable than more delicate plants but it is a great protective bush for small birds. It flowers profusely, mainly from late spring into summer with flowers giving off a delicious sweet scent. In Tasmania flowering is later due to colder climes and Christmas is the time of year when it flowers profusely in gardens and throughout the surrounding bushland.

Continued next page



NSW Christmas Bush

In New South Wales, it is the *Ceratopetalum gummiferum* that has the moniker of that state's Christmas Bush, since its height of flowering is around mid-summer. It is a rainforest tree of 5-10 m with distinctive deep green leaves, cream to pink flowers and red papery calyxes after the flowers are spent, giving the appearance of red lights on a Christmas tree. Its foliage is used to make Christmas wreaths in NSW. It actually grows beyond NSW in Pacific montane areas as far north as central Queensland.

I have never had any luck with this species as it needs rich mountain soil and protection from winds: definitely not suited to the environment of Aireys Inlet. I visited Canberra Botanic Gardens in February and happened to observe several beautiful specimens in the Rainforest Walk zone, about 5 m tall – each showing a full display of the distinctive red-calyx livery.

In Western Australia it is the unique *Nuytsia floribunda* that earns the title of Christmas Bush there. I saw my first specimen of this parasitic tree growing in the Collie cemetery where my paternal grandparents are buried. The abundant brilliant orange-yellow flowers of this plant hang in massed showers and have to be seen to be believed.

“

The abundant brilliant orange-yellow flowers of this plant hang in massed showers and have to be seen to be believed.

”



West Australian Christmas Bush

It is a plant from the mistletoe family, not found naturally outside WA and reputed to be the largest parasitic plant in the world – able to grow to 10 m in height. The singular genus is named after the Dutch explorer Pieter Nuyts (1598-1655) who first saw it growing at Cape Leeuwin on the south west coast of WA.

I was surprised to see large specimens growing in well-established suburban streets of Perth and Fremantle. Relatives in Collie said *Nuytsia* trees take 20 years to flower, but can be cultivated readily when paired with a host tree, usually a banksia or eucalyptus, in the same pot, then potted out after the *Nuytsia* has taken over the roots of the host.

Continued next page

Finally, the New Zealand Christmas Bush, *Metrosideros excelsa*, is an exotic with thick, dark green leaves and showing deep red flowers in summer. It is often mistaken for an Australian plant. The species is able to resist salt-laden winds and many large, mature NZ Christmas bushes, planted in the 1960s, line streets in old Torquay close to Zeally Bay.



#### **New South Wales Christmas Bush**

*Ceratopetalum gummiferum*,

Genus from two Greek words meaning horned petal; species *gummiferum* meaning gum bearing- referring to gum from cut bark.

#### **Tasmanian Christmas Bush**

*Bursaria spinosa*

Genus from Latin, *bursa* meaning bag or purse referring to the shape of the seeds; species, *spinosa* means thorny.

#### **Victorian Christmas Bush**

*Prostanthera lasianthos*

Genus from Greek *Prostanthera* referring to the structure of the stamens; species *lasianthos* for 'hairy flowers'.

#### **West Australian Christmas Bush**

*Nuytsia floribunda*

Genus named after 17th C mariner and explorer, Pieter Nuyts; species Latin *floribunda*- abundant flowers.

#### **New Zealand Christmas Bush**

*Metrosideros excelsa*

Genus named from Greek words, *Metra* meaning heartwood and *sideron* meaning iron, referring to the very hard wood of the species; species Latin *excelsa* meaning highest or superb.

## **Weeds don't take holidays**

The Angair weeders will only take one week off during the Christmas-New Year break because the recent combination of rain and warmth have meant a growth spurt in environmental weeds. The weeders work on public land but there are plenty of weeds in the private gardens of the Surf Coast. Why not make it a holiday task to get rid of a few of them.

Some plants have been regarded in the past as useful garden additions because their flowers are pretty or their foliage attractive; however, they are a real threat as they can take over and smother our indigenous plants. Many are flowering now or setting seed. The main offenders came originally from South Africa as garden plants: Boneseed, Agapanthus, Gazania, Polygala and Watsonia. But some are Australian natives that grow just too well when transported from their home territories. They include the various Melaleucas or Honey-myrtles, Bluebell Creeper and Sweet Pittosporum.

Visit the Angair Nature Show 2021 website under the [Protect/Environmental Care label](#) to find the recommended ways to deal with these invaders.



Agapanthus



## BIRD NOTES: HOODIES ON THE WALL AND BEACHES

Bron Ives and Ellinor Campbell

Have you seen the wonderful mural on the Aireys Inlet Hall? This larger-than-life depiction of a hoodie (Hooded Plover) parent and chick was painted by Geoffrey Carran. I think it just needs a small note asking people to keep their dogs away! Our beaches can be a great place to see birds in the summer, and we are so fortunate to still have some of these unique, and extremely vulnerable, birds in our patch. They need lots of help from all of us to continue to survive and overcome multiple threats.

Here is the latest Hoodie news from Bron Ives:

There are currently seven breeding pairs of Hooded Plovers between Point Addis and Moggs Creek, and two young birds from previous seasons.

The breeding season started early and well when three nests with eggs and one promising scrape were found on 7 September at Aireys Inlet and Point Roadknight. The sites were checked by staff from the Great Ocean Road Authority and signage and enclosures set up. However, after about a week of stormy weather all of the nests were lost.

The next nest was found in mid-September near the Pole House steps; again this was during storms and strong winds. Amazingly, the birds retrieved the eggs a number of times after they had been blown out of the nest, but finally the nest failed after a week of unrelenting weather.

The only active nest at the moment is between the Moggs Creek Estuary and the Spot car park. The nest is well signed. Beach walkers and their dogs are giving the birds and their enclosure a wide berth or turning around if the tide is high.

The female hoodie from the Point Addis pair (the only couple to successfully fledge a chick on the Surf Coast last season) temporarily teamed up with the male hoodie resident at the tip of Point Roadknight. This partnership was short-lived and she has now returned to her unbanded partner at Pt Addis.

Birdlife Australia has issued new Guidelines for Photographing Beach-nesting Birds that are particularly relevant for those of us who like to photograph the Hooded Plovers on our local beaches. They ask beachgoers not to photograph active nests or chicks because disturbances are one of their biggest threats. These guidelines supplement the previously issued Birdlife Australia Photography Code of Ethics.

Contact Janice Carpenter [janicejohnoz@yahoo.com.au](mailto:janicejohnoz@yahoo.com.au) if you'd like a copy of the guidelines or are interested in learning more about becoming a volunteer.

Follow [Friends of the Hooded Plover Surf Coast](#) on Facebook

Continued next page

## BIRD NOTES

Hoodies in Victoria are very much birds that reside on our wild ocean beaches, and it is also very rare for any migratory waders to be seen in our area, but Bron made some really interesting observations on both fronts as follows:

In early September I saw about 27 Sharp-tailed Sandpipers and a single Sanderling foraging on the mud flats near Mellors Swamp at Painkalac Creek. Some had remnant breeding plumage. Maybe it was the perfect timing of their return migration with the infrequent exposure of the mud flats?



Sharp-tailed Sandpiper Image: Margaret Lacey

The next day I saw a single Sanderling at Moggs Creek Estuary with one of the resident Hooded Plovers; the hoodie wasn't that keen on the visitor. Then, in November, a Ruddy Turnstone—such an unusually distinctive species of wader—was with a Hooded Plover at the mouth of the Painkalac Estuary. True to its name, it was up-ending stones, seaweed and sticks searching for food. The world has only two species of turnstones and this is the only one that migrates between Siberia or Alaska to Australia.



Ruddy Turnstone Image: Margaret Lacey

“

it is very rare for any migratory waders to be seen in our area

”

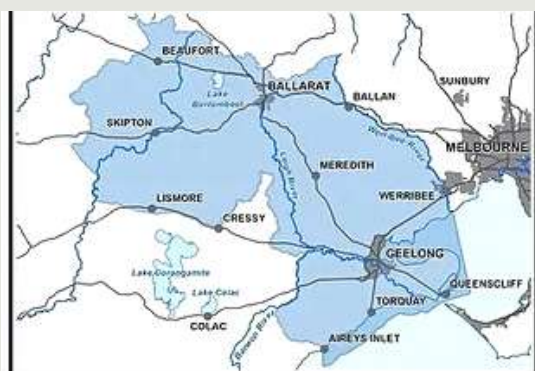
# WADAWURRUNG COUNTRY

Rod Brooks

**Kim-barne Wadawurrung tabayl**

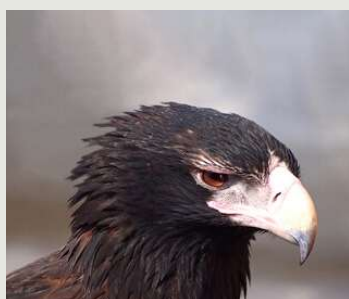
**Welcome to Wadawurrung Country**

Many of Angair's activities occur on Wadawurrung Country which extends from east of Painkalac Creek to Werribee in the east and Beaufort and Ballarat in the north: an area over 10,000 square kilometres.



As part of our acknowledgement of the Wadawurrung people's traditional custodianship and continuing connection to land, sea, community and culture, we can pay our respect by learning some of the Traditional Owners' language.

The Wadawurrung form part of the Kulin Nation, a grouping of five distinct but related language groups from the Port Phillip region. The other four groups are the Boonwurrung, Dja Dja Wurrung, Taungurung and Woiwurrung (usually known as the Wurundjeri). The five are connected through Bunjil (the Wedge-tailed Eagle), the Creation Spirit of the Kulin, and Waa (Australian Raven), the protector of waterways.



Bunjil



Waa

As an oral language, Wadawurrung has been subject over time to vagaries of transcription: Wathaurong, Wathawurrung and Wathaurung. But Wadawurrung is the accepted spelling and used in the name of the Wadawurrung Traditional Owners Aboriginal Corporation which is the group's representative body and a Registered Aboriginal Party (RAP) under the Victorian Aboriginal Heritage Act.

How many of us know the Wadawurrung origin of some of our local place names and what they mean? Many show similar transcription changes to that of the Wadawurrung people. Ballarat is rendered fairly closely to Ballaarat which means 'resting place'. Geelong is Djilang, a 'tongue of land or peninsula'. Connewarre is a version of kunuwarra, the name of the Black Swan. Corio comes from korayn meaning 'salty bay'. The You Yangs are Youang and the Werribee River is Wirribiyaluk.

Others record the distinguishing feature of a place. Anglesea is Kuarka-dorla from 'kuarka', a fishing place, and 'dorla', mullet. Modewarre tells of the abundance of Musk Duck, Waurn Ponds comes from 'waurn' meaning houses and Kardinia means 'early morning light'. Winchelsea is Walert, the word for the Brushtail Possum. Skipton is Wirran, the name of the Yellow-tailed Black-Cockatoo.

What are the names of other animals in Wadawurrung? Djirnap is the Sulphur-crested Cockatoo, Kuwarrk is the Kookaburra, a Parrwang is a Magpie, Waanawal is the Southern Boobook and Wurrwirt is a Wood Duck.

A wallaby is a go-yin, a kangaroo is a goim. The echidna is mon-gark and its fellow monotreme, the platypus, is perridak. The koala is a tongue-testing ngaambulmum.

If you need help with ngaambulmum, djirnap or any other of the above, the free Wadawurrung language introduction app gives the correct pronunciation of a wide range of words.



Parrwang



Kuwarrk

For more information about the Wadawurrung Traditional Owners Aboriginal Corporation's activities, click [here](#).



## SUMMER ORCHIDS

Margaret MacDonald and Alison Watson

It has been an amazing time for orchids lately and many are still flowering well, especially the Mantis Orchid, *Caladenia tentaculata*, and the Large White Spider Orchid, *C. venusta*, with many hybrids between the two creating interesting colour combinations.

In the Hooded Caladenia group, we were very excited to find Bronze Caps, *C. iridescens*, an attractive pinkish coloured orchid with crowded calli growing near Forest Rd. We believe this is the first record for our area. It is a taller, stronger and much more colourful flower than the similar Little Bronze Caps, *C. transitoria*, that we often stumble across in the heathlands. It seems to flower later than the Little Bronze Caps and the flowers certainly last longer in the field.



Bronze Caps



Short Sun Orchid

Another new orchid for the area that has been observed recently is the Short Sun Orchid, *Thelymitra exigua*. It is similar to Slender Sun Orchid, *T. pauciflora*, but only grows to 25 cm; the lowest flower is partly fused to the stem, and it has a longish ribbed leaf. A distinguishing feature is that there is only one stem bract on the Short Sun Orchid while there are two on the Slender Sun Orchid. It has been observed in a number of sites, often forming a small clump of flowers.

Some of the later flowering **sun orchids** may perhaps still be seen. The Blotched Sun Orchid, *T. benthamiana* flowered well on the Gum Flat Rd roadside and in other sites, while the Pale Sun Orchid, *T. pallidiflora*, put on a good performance in the Forest Rd area. Unfortunately the cold weather has caused these orchids to self pollinate and their season may now be over for this year. Cinnamon Bells, *Gastrodia sesamoides*, have started flowering in the Anglesea/ Aireys Inlet area and the taller species *Gastrodia procera* may be seen around the taller forests of Lorne or Forrest.



Blotched Sun Orchid



Pale Sun Orchid

The **leek orchids** have been causing us problems as we have struggled to identify exactly the species now flowering in the district, especially in the burnt areas. We have two varieties that we have observed in full bloom: Scented Leek Orchid, *Prasophyllum odoratum*, and one we are now calling the Heath Leek Orchid, *Prasophyllum spicatum* (Anglesea). Their details will be included in the new edition of our orchid book that should be not too far away from publication. There is a small stunted form of orchid that has been appearing in the field with the Heath Leek Orchid. Who knows whether it will develop into a species of its own? The third *odoratum* species that we have identified in our current book as the Small Coastal Leek Orchid has not been recorded for a long period of time.



Cinnamon Bells

The Flying Duck Orchids, *Caleana major*, and the Small Duck Orchids, *Caleana minor*, are in flower in a number of sites. They are such attractive orchids and certainly delight viewers.



Flying Duck Orchid

Horned Orchids, *Orthoceras strictum*, and the Large Tongue Orchid, *Cryptostylis subulata*, have been observed in good bud and should flower between December and January.



Heath Leek Orchid

The Elbow Orchid, *Thynninorchis huntianus*, is a tiny orchid and difficult to see but is worth looking out for with its extraordinary extended column and hinged labellum designed to attract the wasp which enables pollination to occur.

The maroon Hyacinth Orchid buds, *Dipodium roseum*, are pushing up through the soil and even through dry clay and gravelly tracks. The attractive pink flowers should appear during the next month. The Hyacinth Orchids in Fraser Ave set good seed earlier this year, so it would be great if the group there extends. Keep your eyes out for the rare Spotted Hyacinth Orchid, *Dipodium pardalinum*, that occasionally can be found in the area.

After the spring orchid season, the summer orchids may be less plentiful but there are still plenty for us to track down and admire.

All of our orchids are documented and photographed in *Orchids of the Anglesea District*, unfortunately now out of print. We can assure you a new edition is well on its way to publication. Please make sure you let us know of any unusual sightings you have. This is how we have added two new records to our orchid list over the last month.

Here are our contact details:

Margaret MacDonald [margmacmoggs@icloud.com](mailto:margmacmoggs@icloud.com)

Alison Watson [\\_alisonw577@gmail.com](mailto:_alisonw577@gmail.com)

## DISCARDING YOUR SKELETON

Rob Shepherd

Some weeks ago I came across a beautiful spider: a Social Huntsman, *Delena cancerides*, native to the temperate regions of Australia. On closer inspection something was not quite right: the abdomen was missing! Handling the specimen revealed it was a near perfect exoskeleton of *D. cancerides*. All arthropods, which include insects, arachnids, myriapods (millipedes and centipedes) and crustaceans, possess a hard exoskeleton covering their external surface.

Skeletons provide the mechanical frame for complex multicellular organisms. Early marine organisms of the Proterozoic period (2,500-570 million years ago) developed 'soft' non-mineralised skeletons seen today in animals such as jellyfish. In contrast the exoskeleton consists of a number of hard plates that protect and mechanically support the soft inner body of the arthropod. Subsequently vertebrates – including humans – developed an internal skeleton (an endoskeleton) of mineralised bone to provide mechanical support. Given that arthropods make up 75 percent of all animals on earth, according to the Australian Museum, the exoskeleton is the most common skeletal form in the animal kingdom. In addition to mechanical support, exoskeletons provide protection against predators and a tough coat that reduces desiccation in terrestrial arachnoids.



L. Social Huntsman Spider (*Delena cancerides*)

R. The exoskeleton of *D. cancerides* minus the abdomen

The development of the exoskeleton presented some evolutionary challenges, in particular a hard skeletal coating prevented passive diffusion of oxygen (O<sub>2</sub>) across the body surface – an important form of respiration for multicellular animals with soft skeletons. The first arthropods – all marine animals – overcame this by the development of specialised respiratory structures we call gills. Water can be actively pumped through these feather-shaped gills to increase the O<sub>2</sub> exchange. The gill underwent a significant increase in surface area to ensure efficient O<sub>2</sub> transfer in terrestrial arthropods – the so-called 'book lung'. These arthropods also developed a system of tiny tubes or trachea that permits the passage of gases into the interior of the body.

Arthropod exoskeletons contain chitin and are hardened by the addition of minerals such as calcium carbonate. This hard skeletal structure encloses the whole body including the eyes and the lining of the gut. Because the exoskeleton cannot grow it must be periodically moulted and replaced by a slightly larger one: a complex process that is dangerous for the arthropod. Moulting, or ecdysis, is initiated via the release of enzymes from the underlying soft tissue designed to digest the base of the old exoskeleton. Mineral salts are usually withdrawn from the old skeleton for re-use, and a new soft exoskeleton is then secreted beneath the old skeleton. The old skeleton is shed leaving an almost perfect, but empty, mould. The arthropod then typically pumps up its body by air and water intake to allow the new, pliable skeleton to expand to a larger size. The new exoskeleton may take weeks to harden; the animal is highly vulnerable to predators during this period. Some arthropods, such as spiders and insects, stop moulting when they reach maturity. Others, like crayfish and crabs, moult throughout their lives.

See the links to two videos below illustrating the moulting process and keep a lookout for old exoskeletons in your backyard!

### Videos

<https://www.youtube.com/watch?v=qfAfVfYG81o&t=11s>

<https://www.youtube.com/watch?v=tIyMNpXX4ew>

**References:** Ward, P. & Kirschvin, J. *A New History of Life* Bloomsbury, London, 2015.

Wikipedia, Encyclopedia Britannica,

[https://evolution.berkeley.edu/evolibrary/article/0\\_0\\_0/mantisshrimp\\_01](https://evolution.berkeley.edu/evolibrary/article/0_0_0/mantisshrimp_01)

## PHYTOPHTHORA DIEBACK: QUESTION AND ANSWER

Neville Millen put key questions to ecologists and Angair members, Dr Barbara Wilson and Dr Mark Garkaklis.

### What is *Phytophthora dieback* and what causes it?

*Phytophthora dieback*, *Phytophthora cinnamomi*, is not caused by a fungus and the term 'cinnamon fungus' should not be used. The disease is the result of infestation of plants by an algae-like microbe that lives in the soil and water. It then enters the plant through the roots and damages the tissue that conducts water, resulting in death of plants. We observe this first as yellowing and, finally, total plant collapse.



### How has the disease spread?

Diseased vegetation was first observed in the eastern Otways in the 1970s. It was possibly introduced by vehicles from other infested areas of Victoria. Researchers at Deakin University found that the disease occurrence in the eastern Otways was limited in the 1980s but its spread increased following the 1983 Ash Wednesday wildfire. It has spread significantly since then and has been recorded in heathy open forest and woodland and in riparian open forest in areas such as Bald Hills and Eumeralla.

### What impact does dieback have on animal species?

Significant impacts on small mammals have been recorded in the Otways heathy woodland in trapping studies. The number of species and the number of mammal captures were significantly lower in post-disease areas compared to uninfected areas. Species such as Agile Antechinus, Bush Rat and Swamp Rat were less frequent in diseased vegetation. Radio tracking of marsupials (Agile Antechinus, White-footed Dunnart and Eastern Pygmy-possum) to grass-trees showed their significance for providing cover and nest sites for these species. The loss of grass-trees due to *Phytophthora dieback* thus impacts severely on animals that utilise them.



Agile Antechinus  
Image: Trevor Pescott



Eastern Pygmy Possum  
Image: Trevor Pescott

### What can people do to fight back against the impact of dieback?

We need to be mindful of our movement in the bush! As there are no methods to eradicate *P. cinnamomi*, management options focus on preventing spread into uninfected areas and reducing the impact at infected sites.

Strategies to minimise risk of spread include: prevention of access to non-infected sites; enforcement of regulations to ensure all recreational users stay on named roads and tracks; cleaning cars, bikes, motor bikes and boots of all soil and organic material. Maintenance of roads and tracks to ensure most efficient drainage and not relocating infected gravel or soil during road and track construction or firefighting are also important.

All walkers and bikers need to use washing stations where they are available in national parks. Where they are not, use a bottle of 70/30 methylated spirits and water to spray footwear and tyres before and after being in the bush. Spraying after a walk minimises the risk that you take the disease back to your garden where your native plants and exotics, such as roses and avocados, can be infected.



Angair member Chris Morrissey using a washing station

Protect your home garden by not importing infected soil or plant material and buying soil and potting mixes from certified suppliers and source plants from nurseries that have strong disease management. Unpasteurised mulch can be risky if diseased plants are in the mix as are plants bought on the roadside, particularly if potted plants are left on the ground.

The application of phosphite has been used effectively to ameliorate Phytophthora diseases worldwide by restricting the rate of disease extension and reducing plant mortality. It is now recognised as a major strategy for dieback disease mitigation in Australian native vegetation.

**What predictions do you have for the health of our local landscapes in 20 years?**

We feel more optimistic. The federal National Threat Abatement Plan is achieving much progress nationally and the Australian Government has injected funding for Phytophthora management under the [Wild Otways Initiative](#). We are confident that priority areas with high biodiversity values will be identified and management to contain the spread of the disease and protect uninfected habitat will be implemented, including targeted treatment with phosphite.

“

**The loss of grass-trees due to Phytophthora dieback thus impacts severely on animals that utilise them.**

”



## LOOKING OUT FOR LOCAL PLATYPUS

The platypus is one of the strangest creatures on Earth. This unique mammal reproduces by laying eggs, is venomous (in the case of males) and possesses many other unusual features including a 'sixth-sense' electro-reception system in its amazing bill. The species has recently been listed as 'Vulnerable' in Victoria and there is a need to establish how populations are faring across the state so appropriate local conservation action can be planned.

The Otways region has long been considered a platypus stronghold, though some signs indicate that numbers may be declining there. For instance, platypus were often sighted in the Erskine River right in the heart of Lorne until the early 2000s but there have been no verified reports in recent years.

### Australian Platypus Conservancy



Dr Melody Serena, conservation biologist with the Australian Platypus Conservancy, noted that the lack of recent platypus records for the Erskine may simply reflect the fact that they haven't been reported.

'There is a bit of a myth that platypus only come out at night and are very shy and sensitive and therefore difficult to observe,' she said. 'In fact, platypus often are seen feeding during the day, especially in the early morning and late afternoon. The trick to platypus-spotting is to be quiet and watch particularly for the distinctive 'bull's-eye' ripple patterns created when an animal dives and when it chews its food while resting on the water surface.'

To help map where platypus still occur in the eastern Otways, Melody is asking that anyone who sees a platypus in the next few months in any waterway between Lorne and Apollo Bay consider sharing the location and date with the Conservancy.

As well as providing a better idea about the platypus's status, it's hoped that this information will assist local volunteers to track how well numbers are doing.



Speaking on behalf of the Lorne chapter of the Australian Platypus Monitoring Network, Dr Mary Lush commented that platypus are still seen quite regularly along the St George River in and downstream of Allen Reservoir, but their occurrence in other local rivers including the Erskine is still mostly a matter of conjecture. 'It would be wonderful to have some reliable platypus records for other waterways, and we encourage everyone to spend a bit of time looking for these special animals.'

According to Melody, the good news is that the next few weeks mark the peak of the platypus breeding season, when the animals are particularly likely to be spotted out and about during the day. 'If you see a platypus, the best thing to do is to report the details to the Australian Platypus Conservancy website [www.platypus.asn.au](http://www.platypus.asn.au). We'll make sure that the details are accurately recorded and only used for genuine conservation purposes, including better monitoring.'

Reports of historical platypus sightings along with recent sightings of rakali (aka the Australian Water Rat) are also very welcome.

For further information about this story contact:

**Australian Platypus Conservancy:**

Geoff Williams 03 5416 1478/0419 595939

Email: [platypus.apc@westnet.com.au](mailto:platypus.apc@westnet.com.au)

Website: [www.platypus.asn.au](http://www.platypus.asn.au)

## SUMMER IS FOR SEEDS

Philippa Hesterman

**Summertime. Over the next few months spring flowers will turn into summer seeds. When out walking, take time to look at the different and ingenious ways plants ensure their species' future by producing pods, capsules, winged and awned seeds or sturdy nuts and even, in some cases, rhizomes and other roots that can sucker and multiply. Here are some to look out for.**

### **WATER RIBBONS, *Triglochin procera***

A common, robust, aquatic perennial herb, with a thick rhizome ending in numerous tubers, it is found in shallow freshwater lakes and streams. The ribbon-like erect or long floating leaves to 1.2 m help oxygenate the water enabling fish to flourish. A dense, terminal flower spike with 60-200 small greenish-white flowers held erect above the water appears from August to April making it an attractive plant for large water features. The tubers were an important food source for the Indigenous people, who either roasted them or ate them raw. It can be propagated by division and is common along the Anglesea River and the wetlands around Coogoorah Park.



Water Ribbons  
Image: Neil Tucker



Common Reed  
Image: Neil Tucker

### **COMMON REED, *Phragmites australis***

A common plant of ephemeral water-ways, lakes and depressions with poor drainage and regular inundation, it can spread vigorously forming dense thickets. It's well suited to the re-creation and revegetation of large ecosystems, or providing dense habitat for water birds and frogs. This plant is a fast growing perennial grass, with strong creeping rhizomes. The leaves are smooth and grey-green, 20-60 cm x 1-3 cm tapering to a fine point. White to purplish fluffy, plume-like flower heads appear from January to April. It was an important plant for the Indigenous people of the area, who used the stems for spears and ornaments, and the leaves in basket making. Common Reed can be propagated by seeds and division.

### **MAGENTA STORK'S-BILL, *Pelargonium rodneyanum***

This is a small, low growing perennial with a rosette of simple, oval, lobed, mid-green leaves with prominent veins, growing from a tuberous root. The slender, unbranched flower stems grow from the basal rosette to 60 cm and produce stunning five-petalled magenta flowers with darker veins from November to February. It is not widespread in the district but can be seen in the Angair office garden. It's an ideal rockery plant, and also grows well in containers but must be watered in the summer months. It can also be propagated by seed and division of root stock.



Magenta Stork's Bill  
Image: Margaret MacDonald



Bulbine Lily  
Image: Ellinor Campbell

### **BULBINE LILY, *Bulbine bulbosa***

Bulbine Lily is widespread in plains, grassland and valley eucalyptus forests. It is a densely tufted perennial herb, with erect greenish-grey, succulent, rush-like leaves to 40 cm long, hollow and channelled along their length. The yellow star-like flowers cluster on leafless stems to 50 cm high and appear from September to January. Each plant may have several stems. It produces a capsule, 7 mm long, to protect the angular brown/black seeds. It too can be grown as a container plant but must be watered during the summer months. Plant in informal drifts to get the best effects in the garden but beware of slugs and snails.

Continued next page

**ANGLESEA GREVILLEA***Grevillea infecunda*

This grevillea is an anomaly: it does not produce fertile seeds, hence its botanical name. An open, spreading shrub to 1.5 m high, it is found in dry eucalyptus forests and heathlands. The leaves are variable in shape from broad and lobed, to long, narrow, and holly-like, 60 mm long and prickly. The underside of the leaf is a pale green due to a covering of silky hairs. The flowers are terminal, arranged along one side of the stem and start as palish-green changing to orange-red with age from September to January. The plant is rare and confined to the Anglesea area. In the wild, it is colonised by underground suckering. It can tolerate medium heat fires and prefers a well-drained sandy gravel habitat.

**SMALL GRASS-TREE***Xanthorrhoea minor* subsp *lutea*

Widespread in heathland and grassy woodland, the Small Grass-tree is a slow growing fire resistant perennial, with tufts of long rigid, linear leaves triangular in cross-section to 2.4 mm. It presents one or more cylindrical spikes of densely packed, strongly-scented, creamy-white flowers on woody stems. Insects like the spikes because they produce copious nectar. The fruit is a hard pointed capsule containing black seeds. This grass-tree has no trunk above the ground, only an underground stem, from which the tufted leaves arise. This plant can be seen this month in abundant flower on the northern side of the Surf Coast Highway towards Minter Drive.



When you are out in the bushland, do take your copy of *Flowers of Anglesea and Aireys Inlet*. This book is colour-coded to help you recognise the many and varied flowers in this spectacular area where heathland and forest meet the sea.

**References:**

- Margaret MacDonald (2009) *Flowers of Anglesea and Aireys Inlet*, Inverted Logic, Melbourne.  
 Enid Mayfield (2006) *Flora of the Otway Plain and Ranges*, vols.1 and 2, Linton Press, Geelong  
 Gray, M. & Knight, J (2001) *Flora of Melbourne*, 3rd ed., Hyland House, Australia  
 Society for Growing Australian Plants (1995) *Plants of Melbourne's Western Plains*

“

**take time to look at the different and ingenious ways  
plants ensure their species' future**

”



## RESTORATION OF A REMNANT OF THE ANGLESEA HEATH

Carl Rayner and Neil Tucker



Environmental weed seedlings



Weeders at work

The ‘Wirilda’ site, which is still part of the Alcoa Lease, has been partly restored and the cover of young indigenous vegetation is looking very promising, with a high biodiversity of plant species. Just a few years ago though, it was very different, with a forest of non-indigenous environmental weeds that were so thick that in places it was almost impassable. Watching the explosion of germination of indigenous flora – as the removal of environmental weeds makes the soil warmer and more moist and mass germination occurs – has been so exciting to everyone involved with the restoration.

The ‘Wirilda’ site is adjacent to Coalmine Rd and west of the Anglesea River. We named this area ‘Wirilda’, because in the 1960s and 70s, Alcoa had planted a host of non-indigenous environmental weeds including Wirilda, *Acacia provincialis*, Coast Teatree, *Leptospermum laevigatum*, Giant Honey Myrtle, *Melaleuca armillaris*, and many weedy gum trees to form a barrier from mining noise affecting the Anglesea township. The site was not included in the national park because it is not contiguous with the park, being bounded by Coogoorah Park, the old mine site, golf club land and Alcoa freehold land.

Angair members first became involved with this 18-ha remnant of the Anglesea Heath about 10 years ago, and worked to remove Wirilda. Then after a cool burn Sallow Wattle, *Acacia longifolia* var. *longifolia*, invaded the site, particularly closer to the Anglesea River.

We methodically removed weeds over the site until we found a forest of environmental weeds, immediately west of the Barwon Water Bore site. We needed more help to deal with this, so in 2018 we successfully obtained a three-year Community Grant of \$9,800 from the Victorian Department of Environment, Land, Water and Planning (DELWP) to restore the site.

Angair formed a partnership with the Santa Monica Campus of St Bernards College at Big Hill to help with the restoration. Over the three years of the project, we had numerous working bees each with up to 28 Year 9 students, as well as teachers and Angair volunteers. Students loved removing the big environmental weeds, so our Monday morning Angair weeders focused on removing the smaller fiddly weeds. We used the project funding to mulch the cut environmental weeds and for chain sawing about 90 gum trees. Lockdowns in 2020 and 2021 affected the project but we were still able to complete it by July 2021.

In October 2020 DELWP Forest Fire Management burnt the site as part of their policy to minimize the impact of bushfires on the Anglesea township. During the winter of 2021, we noticed that this had caused an astonishing explosion of Sallow Wattle germination in part of the site.

Continued next page

Indigenous plants also germinated but we urgently needed to remove the Sallow Wattle before they smothered the indigenous seedlings. A number of Angair Monday morning working bees focused on removing Sallow Wattle, and several members spent many additional hours removing the weed.

Alcoa owns freehold land directly south of this site stretching to Fraser Ave and has promised to give the land to the government for conservation protection. Both sites, totalling about 30 ha, are very floristic, with a high biodiversity of species and the area is a favourite of wildflower enthusiasts.

One critical question for the site’s permanent protection will be who eventually comes to manage it. Angair weeders as well as the St Bernards students have done a fantastic job and the young restored vegetation is looking very promising. The last step to fully protect the site will be to install signs. This will show the local community that the heathy woodland is of significant value. One possibility could be Angair Flora Reserve?



Before start from Peg 0 south



After completion from Peg 0 south



Before start from Peg 1 west



After completion from Peg 1 west

## THE SERPENT'S GARDEN

Neville Millen

In Angahook forest I wandered far  
One of my morning solitary walks  
I was charmed by yellow Tiny Star  
By triggerplants on slender stalks

Among the plants to catch my eye  
The hope to see flora, unique or rare,  
Hiding from sight, permanently shy  
Sometimes revealed in open glare

In grassland near a stand of trees  
Clustered, deep Blue-spike Milkwort  
To photograph—slowly onto my knees  
Something rustled; my body went taut.

Coiled near the plants of my desire,  
Eyes unblinking—tongue tasting air  
Silent, the tiger snake bore me no ire  
Though intent clear: closer if you dare!

I stumbled on these rare bush jewels  
The snake guardian didn't strike at me  
Had it sensed lore among botanising fools  
To care and respect the plants we see

Later, reflecting on disturbing the snake  
I had trespassed into its garden domain  
Those precious photos I yearned to take  
Pale against the memory I now retain

Blue-spike Milkwort,  
*Comesperma calymega*

A small, stiff, heathland shrub with clusters of deep blue pea-like flowers on stalks about 30-40 cm in height. It flowers in late spring. I have seen it only on rare occasions.



Image: Ellinor Campbell

## Three views of the Rufous Bristlebird



photo: Rob Shepherd



painting: Kaye Traynor



photo: Rob Shepherd

## Education Committee getting ready for school

The newly-formed Angair Education Committee has already begun to develop its program for the 2022 school year. The committee aims to involve students from selected local schools in adding material about pest animals and plants to the Angair Nature Show's Protect theme.

The committee is also developing the first in a planned series of family Sunday walks which will, over time, introduce three or four separate and special places. The first walk will focus on finding and identifying the plants, birds and other animals (including insects) at Coogoorah Park, Anglesea.

The committee has taken over the task of arranging the speakers for Angair's social evenings and other events, as we go back to more face-to-face encounters. Possible topics include fungi (a talk which was cancelled last year), and local geology.

## MINE REVEGETATION PROGRAM SPRINGS TO LIFE

Warren Sharp,  
Site Asset Manager, Alcoa Anglesea

Rehabilitation activities have been a continuous part of Alcoa's mining program, with progressive rehabilitation being undertaken since the 1970s. Following the permanent closure of our operations in 2015, we shared the [draft Mine Rehabilitation and Closure Plan](#), aligned to the guiding principles we developed with the community, and to meet our regulatory obligations. The rehabilitated mine site will feature a large waterbody, extensive rehabilitated areas and access for potential future alternative uses.

The vegetation strategy is one of three key pieces of work in the Mine Rehabilitation and Closure Plan (MRCP). It was prepared by Alcoa with the support of technical consultants including Ecology Australia and Ag-Challenge, who have had a long association with the mine's rehabilitation activities. As outlined in the draft MRCP the revegetation plan has three key objectives:

1. Minimise impact on the Anglesea Heath.
2. Preserve historical rehabilitation.
3. Infill historical rehabilitation with native species.

Two methods have been used – topsoil subsoil revegetation and native grasslands planting – across approximately 77 hectares.



### Topsoil Subsoil Revegetation

Carried out across 2018 and 2019, the topsoil subsoil revegetation amounts to approximately 24 hectares. The purpose of the technique, and as per past practice at Anglesea, is to establish native heathy woodlands.

The areas completed with this technique since 2018 include the north and west walls of the mine, the old mine haul road and infill historical rehabilitation areas such as the former fire services dam.

We know from experience that revegetation using this technique takes time, however we also know that this will return great diversity to these areas. To date all areas are establishing well, and we continue to see good results in the native heath vegetation species regenerated from the topsoil. Maintenance and monitoring of these areas is underway including inspections, species monitoring and a weeding program to remove invasive species.



### Native Grasslands

Approximately 53 hectares of native grasslands is now establishing well on the steeper southern mine slopes. The primary grassland species, selected after an almost two year onsite trial, includes five native Wallaby Grasses (*Rytidosperma* spp.). These are widespread in the Victorian landscape with their respective distributions extending to the Anglesea area. The specific species include:

- Brown-back Wallaby-grass, *Rytidosperma duttonianum*
- Copper-awned Wallaby-grass, *Rytidosperma fulvum*
- Common Wallaby-grass, *Rytidosperma caespitosum*
- Bristly Wallaby-grass, *Rytidosperma setaceum*
- Slender Wallaby-grass, *Rytidosperma racemosum*

The grasses were hydroseeded into an engineered topsoil consisting of an organically enriched coarse gravelly sand overlying a sandy clay that has been treated with calcium sulphate (gypsum).

Our primary goal is to get the grasslands established and in the first 12 months we have achieved approximately 56 per cent ground cover. We are targeting better than 80 per cent coverage of the grasslands area in the first three years. We have also envisaged the potential ‘softening’ of the grasslands slopes with shrubs and trees at the right time in the future. No timeframe has been set for this as yet, particularly as we also expect that heath species will naturally recruit and establish into the grasslands, which has started to happen already.

The maintenance and monitoring program is in full swing and includes regular inspections, an ongoing invasive weed program, and erosion control activities undertaken where necessary.

### Handback of Leased Areas

In time, we expect that the historically ‘disturbed’ area of the mine will become a natural extension of the surrounding Anglesea Heath. We envisage we will be actively monitoring and maintaining the area for up to 10 years before a ‘handback’ of the area to the Victorian Government, and the area is potentially opened up to the community in the future. Any future handback will be subject to Alcoa meeting defined closure criteria and objectives agreed with the key regulatory stakeholders.



“

In time, we expect that the historically ‘disturbed’ area of the mine will become a natural extension of the surrounding Anglesea Heath.

”

## Australia's native wildlife in grip of unprecedented attack

Australia is in the grip of an unprecedented alien attack on its native wildlife and environment, with experts warning more of our unique flora and fauna is in danger of disappearing by 2050 unless urgent action is taken.

A new CSIRO report, *Fighting plagues and predators Australia's path to a pest and weed-free future*, reveals the environment is facing a "sliding doors" moment, with two possible futures for Australia, depending on the decisions made today.

[Download the report](#)



Eastern Spinebill feeding on Austral Grasstree,  
*Xanthorrhoea australis*

Image: Rob Shepherd

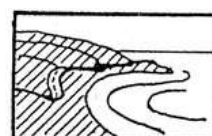
## From the Archives 30 Years ago - the Great Ocean Road Campaign

1991 saw the start of one of Angair's stand-out campaigns – the struggle to protect the heathland on the south west corner of O'Donohue Rd from development. One successful strategy was the extensive fund-raising campaign to raise money to help purchase the land in question. Many Angair members remember the unofficial Toll Gate set up at the upper Urquhart Bluff car park to collect donations for the cause.

A full account of the Great Ocean Road Campaign is in *ANGAIR: the first 50 years* by Roslyn Gibson. Available at the Angair office or order online [www.angair.org.au/publications](http://www.angair.org.au/publications)



KEEP THE OCEAN ROAD GREAT!



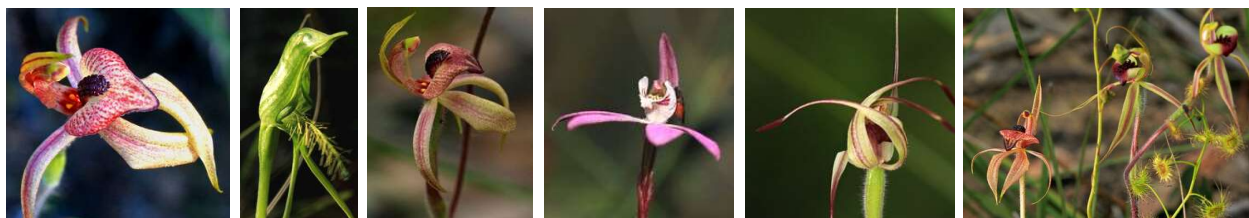
**TOLL-GATE  
TICKET  
1991**

DONATIONS TOWARDS THE LAND PURCHASE  
APPEAL - AUTHORISED BY THE VICTORIAN  
CONSERVATION TRUST.

THE GREAT OCEAN ROAD COMMITTEE

## SAVE THE DATE

At the Annual General Meeting on 25 February 2022, Angair will launch *Orchid Journey with Margaret MacDonald*. The four videos, filmed in spring by local photographic artist Rebecca Hosking, celebrate Margaret's unique contribution to knowledge of the region's orchids.



Further details in the February Angair News

### Angair Membership

Angair annual membership subscriptions for 2022 are now due for all members who joined before September 2021.

The December edition of Angair News has membership renewal details or visit our [website](#).

You will also see a small questionnaire which we would like you to complete. Your answers will be used for Angair's future planning and to ensure we are responsive to our members interests.

A reminder email will also be sent with membership renewal details.



### Next issue:

Our next issue will be published in March 2022 and will be the autumn edition. We welcome any contributions of local, seasonal or general environmental interest. Send your contributions to [angair.communication@gmail.com](mailto:angair.communication@gmail.com) by mid-February and clearly label them 'for Angair Quarterly'.

