



U3A ... Learn, Laugh, Live Mallacoota & District Newsletter

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Presidents Desk

Dear members,

Thank you for your interest and support in 2023. We look forward to seeing you all when we restart in February 2024.

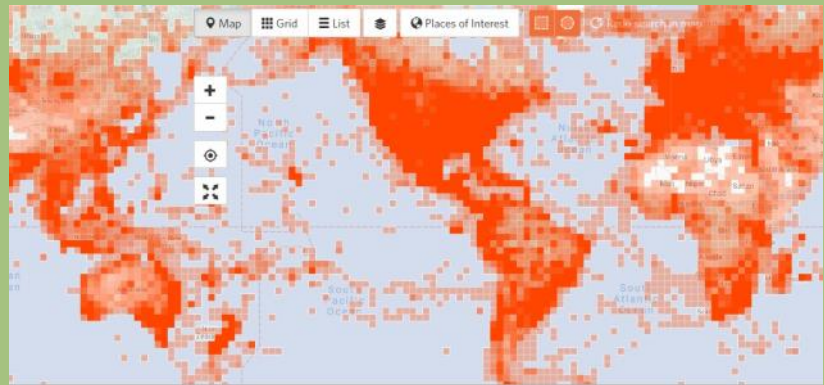
I wish to remind you to please be extra careful about scams. The scammers are busy this time of year too. A scam will usually have a sense of urgency and an action or information required from you. STOP. Beware of emails and text messages that are out of character, urgent or ask for money. If it purports to be friend or family or bank ring them directly and check.

Wishing you and your families a very happy and safe Christmas and

Holiday Season.

Fiona Raitt

President



iNaturalist

a must for any citizen scientist

Bryce Watts-Parker

Our October presentation by well known local naturalist Bryce Watts-Parker covered the use of the free application, **iNaturalist**. Designed for Phones, and Tablets this app is for recording sightings of wildlife: flora and fauna. It offers a way of identifying, accessing, and cataloguing information submitted for use by **citizen scientists** ... that's you and me, who don't know what we are looking at or photographing.

Alternatively, we can keep count of, note location as well supply evidence of our adventure sightings, near and far.

iNaturalist is a huge, world-wide, organisation based around shared data available through a website (<https://www.inaturalist.org/>) and through a smartphone app. It can be described as:

"... a place to record and organize nature findings, meet other nature enthusiasts, and learn about the natural world."

As at 14 October 2023 there are 2,862,747 observers within the system and 331,228 people who identify the material submitted by observers. To date 161,431,362 records have been submitted, covering 431,059 species including plants, fungi, fish, birds reptiles, mammals and other life forms. A map on the website (see image above) shows that the system covers all land areas (except a few patches in the Sahara) and a fair sample of the oceans.

While scientists may have been thought of as academics and or professional researchers there has been a long tradition of amateur observers contributing to knowledge. **iNaturalist** has provided an avenue for their efforts to be gathered together under a consistent framework.

The efforts of citizen scientists are important. Due to the number of observers scientists are able to undertake wider studies that could not be undertaken by formal structured surveys. By way of example, on Australian reefs, **iNaturalist** users have recorded more fish species than structured surveys could, including rare species that such surveys often miss. Bryce cited other examples where **iNaturalist** has added to knowledge in ways that formal research might miss:

(cont. p2)



A snaking pattern cut from an elm leaf near Montreal, was flagged on **iNaturalist** as possible evidence of the elm zigzag sawfly, an invasive species that had not yet been found in North America. This became the basis for a formal ‘watch for the invader.

An **iNaturalist** observer found a dead snake and on investigating its stomach contents found it included a lizard thought to be extinct. Follow up research found more specimens and revised knowledge about where and how the lizards lived (and why they had been missed – they live in trapdoor spider burrows).

The basic process for **iNaturalist** is very simple, with three steps: (1) record an observation (most often by taking a photograph, either through the phone app or by uploading to the website); (2) this is shared with fellow naturalists; and (3) the identification and other matters can then be discussed with other observers. (In later comments members of the audience noted uses of the system in which discussions with external experts enabled identification of an unusual Wattle found in the bush and a dead Sunfish washed up on Tip Beach.)

The **iNaturalist** site includes a range of “How-to” videos and Bryce showed an example which covered adding an observation on a smartphone https://www.inaturalist.org/pages/video+tutorials#add_mob. The essential steps are: to take the photograph using the phone’s camera; press a button “What did you see?” to get a suggested identification; a details screen allows for:

other photos to be added – very useful to include parts of the specimen not visible in the first image; and

the location to be added automatically (if location is switched on in the phone) or by later editing in the website. If the species is sensitive – eg very rare or subject to poaching – the site can be set to obscure the precise location.

After completing that screen pressing “Share” uploads the observation to the system and allows others to comment. (If subsequent discussion indicates changes are needed the record can be edited on the website.)

The next step was to examine how the system can be used to research stored records – either your own or by others. Another video was shown <https://www.inaturalist.org/pages/video+tutorials#explore>.

To start the process, on the home page tap on “Explore” and then “Observations.” This gives a world map showing how observations are clustered in areas where **iNaturalists** are active. It is possible to scroll into this map to focus on areas of interest. The information can also be viewed by species. At the date of compiling the video the most common species reported was House Sparrow with 2,719 observations: that species is now 5th on the list, with 241,977 observations. Mallard is the current #1 with 418,093 records. The video then explained how to use Filters.

To filter by species simply type in the name of a species (eg Orchard Butterfly) or group of species (eg Butterflies and Moths) in which you are interested. To filter by location type in a street address in the box above the map and the map zooms to centre on that address with a bounding box around it. The video describes many other ways of filtering by location. A range of other filters are available and there is a button to download the data for later reference.

Bryce then connected his iPhone to the screen and demonstrated most of the features discussed in the video using observations for Mallacoota (image 2 shows the location of observations near the centre of Mallacoota).

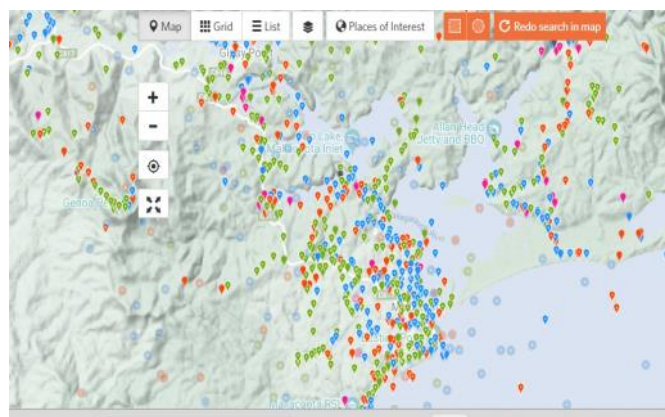
Questions raised by the audience included:

*Should one use **iNaturalist** or a specialist app such as Frog ID?* The important matter is to get information into the scientific record. The advantage of **iNaturalist** is that it covers all lifeforms.

What happens if not in range of the phone service? The observations will be recorded on your phone and can be uploaded when back in range.

*Why didn't **iNaturalist** offer to record a location automatically?* Location services must be switched on in the phone. For people that don't want them turned on it is possible to use the map to insert the location manually.

Some members of the group went with Bryce to the rainforest area to practice their skills. As well as plants, one member photographed a bird which the app successfully identified as a Grey Fantail: a great outcome for such an active bird. Flowering plants identified by the AI within the app included: *Homolanthus populifolius* (Bleeding heart); *Ozothamnus obcordatus* (Grey Everlasting); and *Acacia mearnsii* (Black Wattle). The AI could not offer a suitable full suggestion for a tree fern, only giving the Genus *Cyathea*. Bryce identified it as *C. cooperi* and after submission to the community this was confirmed by identifiers. However, one indicated that it was almost certainly an escapee from gardens, as is the case in SE NSW. This is a very interesting example of the identification process and the value of commentary by other **citizen scientists**.





Plant Walks

Following the presentation on “**Naming of Plants**” we arranged two visits to areas close to town to practice what we had learnt ... and to enjoy plants and a short stroll in the bush.

After the second walk we agreed that this could become a regular event and have adopted a practice of holding the walks on the 2nd Wednesday of each month.

The plant lists from each walk, and an overall summary are included in a Google Sheet (<https://docs.google.com/spreadsheets/d/1oKbM8ZV7ORs4z25goRp967A5VoT3Y4xYJVskdE9-guE/edit?usp=sharing>). As suggested by Bryce in his presentation in October an iNaturalist Project has been created so that all records of living organisms (plants, mammals, fish, insects, fungi ...) in the area are consolidated. This is at <https://www.inaturalist.org/projects/u3a-mallacoota-plant-walks>.

The overall list for the project area includes 352 species. with 85 plant species identified on the 4 walks undertaken thus far.

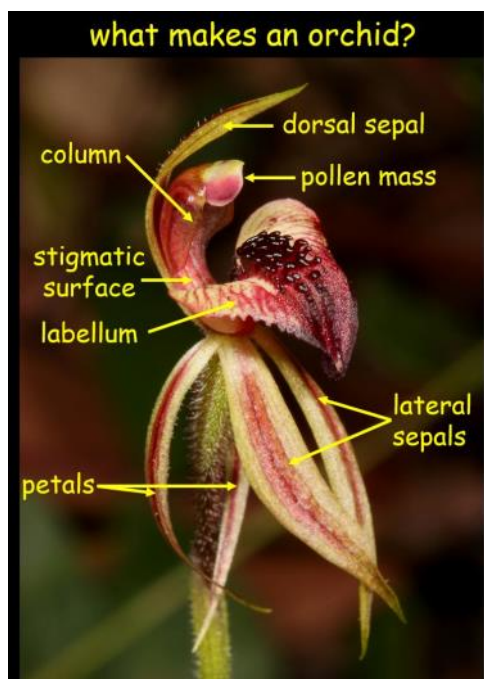


A Year of Orchids

The Family Orchidaceae is the largest family of flowering plants in the world, with about 26,000 described species and perhaps as many as 30,000 species, with dozens of new species being discovered each year.

The structure of the flowers is important in identifying the flowers. Samples were provided to illustrate the key components. In identifying the plants particular importance applies to the labellum (the modified 3rd petal) and the column.

Orchids have a worldwide distribution, although being absent from Antarctica. Australia has about 2,000 species of orchids in 190 genera, including about 1,600 named species and at least 400 known but unnamed species, plus about 650 naturally occurring hybrid orchids (a cross between two different species).



Victoria currently has 452 orchid species in 39 genera, consisting of 379 named species and 73 unnamed species, plus about 150 different hybrids. So, with just 3% of Australia's land area, Victoria has almost one-quarter of Australia's orchids.

Almost all of Victoria's orchids are seasonal ground orchids, with just five species of evergreen tree and rock orchids.

The area covered by Gary Backhouse's presentation is Far East Gippsland: east of the Cann River which is within 2 hours drive of Mallacoota, making for a good day out.

Within this area 161 species of orchids in 27 genera have been recorded, with 144 named species and 17 unnamed species. This area contains about one-third of Victoria's orchids in just 1.3% of its land area.

Important orchid habitats include open forest, heath and coastal scrubs, granite outcrops, swamps especially Spear Grasstree swampy plains (a habitat almost unique to East Gippsland) and rainforest.

Gary then presented the





Late autumn and winter brings an increasing number of orchids in flower, including

3 species of mosquito orchids *Acianthus*,

6 species of helmet orchids *Corybas*, and at least

30 species of greenhoods *Pterostylis*.

The greenhoods have a range of different attributes that characterise them.

Spring is the most productive orchid season, with dozens of species flowering, including about 25 species of spider orchids and

relatives *Caladenia*, (including the spider orchid *C. peisleyi* named in honour of a local naturalist, see image) 5

species of beard orchids *Calochilus*,

5 species of donkey orchids *Diuris* (see image), 8

species of the tiny onion orchids *Microtis*, 11 leek orchids *Prasophyllum* and about

20 species of the beautiful sun orchids *Thelymitra*.

Gary stressed the importance of the column in differentiating the various species of Sun Orchid.

The 5 evergreen tree and rock orchids also flower in late spring.

A number of latering flowering species are described as fire-following.

They only flower in the Spring following a Summer bushfire:

Pyrorchis nigricans – Red-beaks – is a notable example.



Diuris orientis



Diuris sulphurea

As conditions become warmer and drier in early summer, the number of flowering orchids declines,

although several species do flower at this time of the year including Horned Orchid *Orthoceras*, the delightful Large and Small Duck Orchids *Caleana*, and finishing the year with the remarkable little Eastern Elbow Orchid *Thynniorchis* a notable wasp-pollinated orchid.

Following the presentation a number of questions were asked, including:

How long between finding a new species and it being formally named? It can take years, depending on the priorities of herbaria. A species found in 2009 has still not been named.

Are all orchids insect pollinated?

Mostly, but some are bird pollinated and one group are pollinated by falling raindrops.

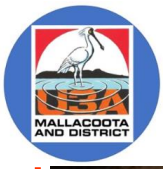
Are pollinators being studied? Yes, especially for reintroductions where the plant has to be considered along with pollinators and the soil fungi. The impact of climate

change on pollinators is a particular issue of concern.

In responding a question regarding taxonomic splits Gary explained that much of the work is based upon analysis of DNA.

A difficult area is there are differences between members of a species as well as differences between species.

Much of the identification work still relies on the appearance of the plants.



But wait ... there's more ...

Three Years in the Kimberly

Part 3

with Steve & Kim Millard

In the recent episode of Steve's & Kim's time in the Kimberly he took us on trip in space and time. The space element was covered in his introductory remarks with an illustrative current topographic map as background. Time was covered both in

- some geological maps showing how the geological features were created several million years ago; and
- how the coastline has varied, explaining the patterns of human occupation of the country and some artistic elements of the culture of the indigenous people.

Steve began by going back in time to when the port of Derby (marked as 1 on the map image) was the main way of getting goods into the area. If taken by land, camels or bullocks were often used. The road was too rough for trucks, and horses suffered from Walkabout disease after eating a weed (*Crotalaria*) common to the area. An alternative was the sea, by lugger to Walcott Inlet (2).

When using the water, then as now, a major problem is the presence of saltwater crocodiles. In other parts of the region freshwater crocodiles were common, and less dangerous than 'salties'. The reptiles are celebrated by entering the Broome Zoo through a Salty's jaws! The specimens inside included Blue-winged Kookaburra which is similar in appearance to the Laughing Kookaburra although very different in call (thanks Kim, for the playback of the call). Wildlife continued to feature with an anthill representing the source of much building material in the early days.



Getting to the country, the first stop was Geike Gorge (3) on the Fitzroy River. The Fitzroy is over 700kms long and drains 94,000 km². The images clearly showed the difference in water height between the dry season and the floods of the wet. Steve remarked on the most recent floods inundating the area early in 2023 (according to Wikipedia, 13-15 metres above the causeway at Fitzroy Crossing). The Gorge area was once (going back 350 million years ago) a reef which has been transformed into limestone with erosion giving rise to interesting shapes in the gorge walls.

The next site was another limestone area (part of the same old reef) at Tunnel Creek (4). Not surprisingly this site includes a tunnel carved by the creek! The walk is about 2km return trip with the water up to waist deep at the time of Steve and Kim's adventure. In the tunnel middle the roof has fallen in allowing excellent photo-ops!

On to Windjana Gorge!(5) The rocks in this Gorge, yet again the reef from the Devonian Age, showed well the underlying red colour of the limestone and dark colouring of the algae growing on it. Showing well too, were some modern era reptiles of the fresh water variety. This contrasted well with the fossils, including Nautiloids, embedded in the rock. In places the erosion of the limestone created caves, which have been used as burial sites by the aboriginal people. The walls of the Gorge were spectacular, especially with a full moon rising above them.

The expedition now crossed to the North side of the Gibb River Rd, going to Mount Hart (6), the highest mountain in this area. Images of the cliffs showed the flat tops to the jump-ups where a layer of tough rock resisted weathering rather better than the strata below them.

We visited Mornington Station, run by the Australian Wildlife Conservancy (AWC) also covered in the June 2023 talk to this U3A Group by Tim Allard (CEO of AWC).

The AWC manages the number of visitors to the station. It is necessary to call in before arriving to ensure there was space: Steve and Kim had to stay in the overflow for a night.

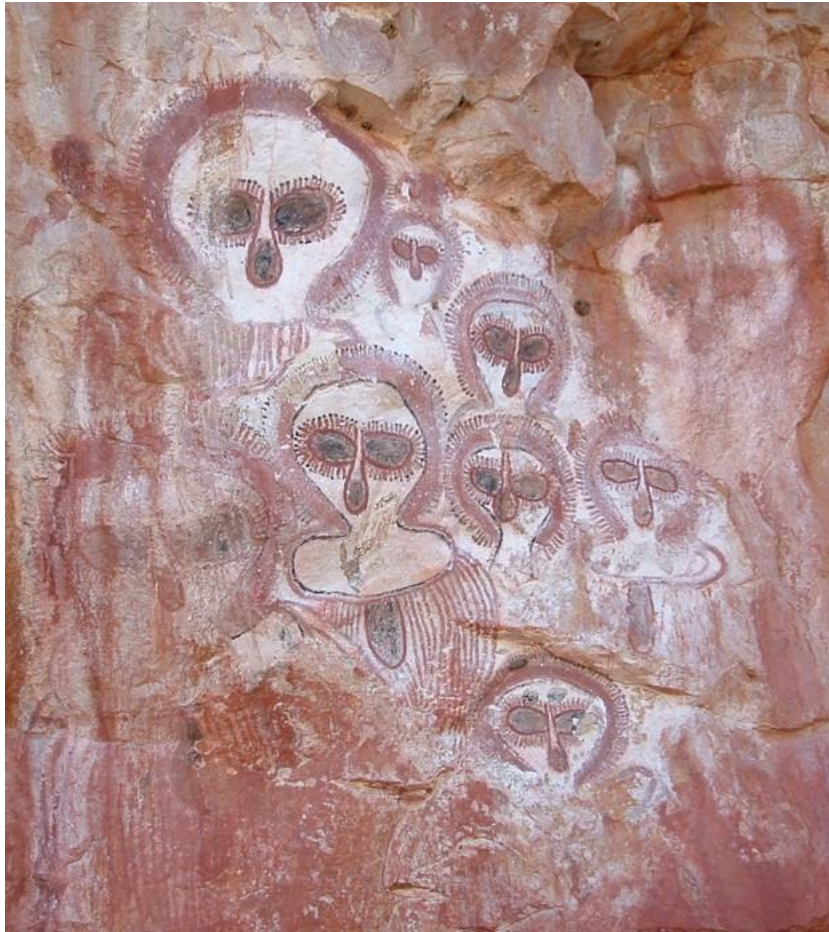


AWC are destocking

the station and removing all the feral pests (foxes, cats etc) to allow the place to return to a more natural state. The country around here, on the Fitzroy and Hann Rivers, was very rocky but still grew many wildflowers including some Acacias and Grevilleas.

The Gibb River Road was crossed again, going to Mount Elizabeth Station (8). This is of particular interest for a wide range of rock paintings covering the full range of time that humans have occupied this area. This is described in Graham Walsh's book "Bradshaws ancient rock paintings of North West Australia".

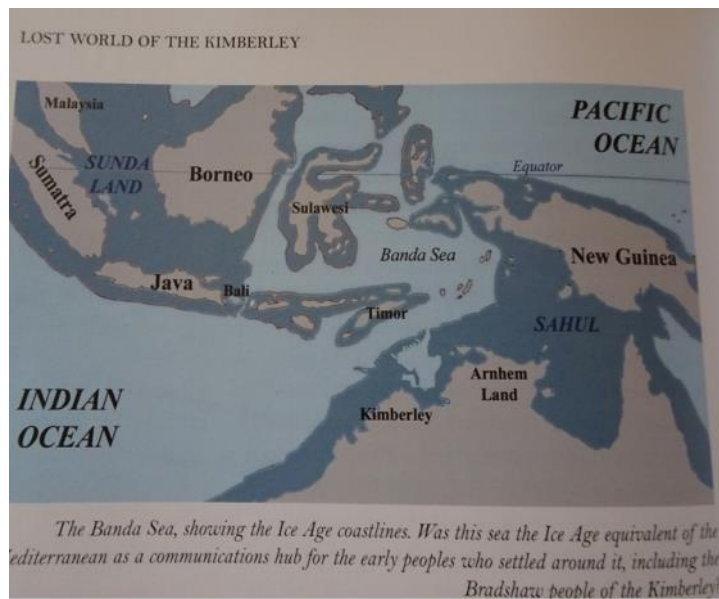
During the ice ages much water was locked up in glaciers so sea level was lower, making it much easier for people to island hop, possibly from Indonesia and Papua New Guinea, to settle in Australia.



This area had works from both the Bradshaw Period (17,000 years ago) and the far more recent (at most 4,000 years ago) Wandjina Period. An example of Wandjina image is shown: note that the faces have no mouths: according to Wikipedia "Two explanations have been given for this: (a) they are so powerful they do not require speech and (b) if they had mouths, the rain would never cease.

The final slide was of the Pentecost River showing the width of the River, even in the Dry and the very rocky country surrounding it.

After allowing for expenses, and with some contributions from the audience, \$120 was contributed to Yipirinya school, Alice Springs.



From Your U3A Mallacoota and District Committee
 Have a wonderful season of health, peace, with those close to you
 Take good care of each other
 Be grateful for all we have and Think of those who haven't
 See you all in the New Year