

# TOORADIN NATURE LINK DISCOVERY AND RESEARCH CENTRE

A Healesville to Phillip Island Nature Link Project



**President's Report Winter 2020** It's a great relief to be gradually coming out of Covid-19 restrictions. Heart-felt sympathy to those who may have lost family members, loved ones or friends or have been sick themselves or lost their jobs or had businesses affected. Every one of us has been affected in some way but, in general, we are blessed that the impact has not be as severe as elsewhere in the world. Congratulations to our government and communities at all levels for the response to date, fingers crossed for the future. Like others, HPNL has had to cancel events and upgrade our technology skills to enable meeting on line but we have not been idle and have started back with small group gatherings.

Thanks to **Mary and Alan Cole** and the speakers at HPNL's '**Organic Weed Control, Leaf Litter and Bushfire Recovery**' Workshop that was held before the shutdown.

**Tooradin Inlet Vegetation Survey / Holt CEP Grant** We've had good news in being awarded a \$20,000 Community Environment Program (CEP) grant by the Federal government for a vegetation survey of Tooradin Inlet, including community engagement and education, weed removal and revegetation work. Many thanks to the Federal Member for Holt, **Mr Anthony Byrne** and his political advisor, **Daniel White**, for their assistance in facilitating our getting this grant.

**Tooradin Vegetation Survey Workshop** On June 7<sup>th</sup> **Ian Stevenson** facilitated our first practical workshop taking a group from HPNL around the Inlet identifying and learning about mangroves, salt marsh and locally indigenous terrestrial plants and vegetation communities. Thank you Ian. Lots of photographs were taken with a view to compiling a Tooradin Inlet Nature Guide. The guide is planned to include information about history and geology as well as the marine and terrestrial flora and fauna of the area. This will complement an educational video being produced by film maker Brian Hughes. With the impact of Covid-19 the deadline for the CEP grant has been extended to June 2021 which should allow for these to be comfortably completed.

**Tooradin Environmental Centre, Work with MADA** We are continuing to work with **Professor Nigel Bertram**, from Monash Art, Design and Architecture, to develop concept drawings for a community / environment centre in Tooradin informed by preliminary designs that 13 Monash Architecture students produced in 2019. The vegetation survey work dove tails neatly with this. Thank you Nigel and thank you **Jeff Weir**. Jeff, the Executive Director of the Dolphin Research Institute, joined Nigel and HPNL members on 14<sup>th</sup> June for a tour around potential community / environment centre sites. He was involved in a 2006 initiative to develop such a centre and has valuable insights to share.



**Upper Cardinia Creek** HPNL has continued to work with Melbourne Water in this area, having been given a second grant earlier this year. Melbourne Water is doing infrastructure changes to allow for ponds for Growling Grass Frogs and to promote locally indigenous biodiversity. Covid-19 and delays with infrastructure planning and completion have meant that we are limited in what we are able to do immediately but progress is being made and a community engagement / planting day will happen later this year.

**Bass Coast** The former **GMH Proving Grounds**, 844 hectares of high conservation value land near Lang Lang, including the Grantville Grass Trees, have quite suddenly been put up for sale with local conservation groups, including HPNL, have been scrambling to encourage local, state and Federal governments to acquire the property and/or place conservation overlays to protect it. Bass Coast Council has now unanimously voted to support working with other levels of government to acquire the site. It was recognised in HPNL's 2018 Strategy as an important part of the Healesville to Phillip Island Nature Link and could be a key part of a 'Western Port' National Park. See more information elsewhere in this newsletter.

**Upper Bunyip** Our workshop at Buneep Park on Incentives for Wildlife Habitats had to be postponed because of Covid-19 and is being rescheduled for later in the year. We will be advising a date once availability of speakers is confirmed.

A big thank to all our committee people, especially to **Marlene Hargreaves** who has been working very hard to see the Tooradin Environment Centre take shape and has done a great job in compiling this newsletter with all the many HPNL happenings. Thanks also to **Brian Hughes** who has been busy, as always, taking amazing images of HPNL activities.

Keep well,

Pat Macwhirter



## About

HPNL INC is an advocacy group of environmental leaders from organisations such as local Landcare groups, Western Port Biosphere, Dolphin Research Institute, Western Port Seagrass Partnership, Port Phillip & Western Port CMA, the Platypus Conservancy and other environmental groups - working in partnership with government and non-government organisations, land owners, developers and concerned citizens. [Video](#)



## Mission

To create a world class 'NATURE LINK' from Healesville to Phillip Island, to protect wildlife habitat and to mitigate threats to our natural and cultural assets including some of our most loved and iconic plants, animals and places.



## Project overview

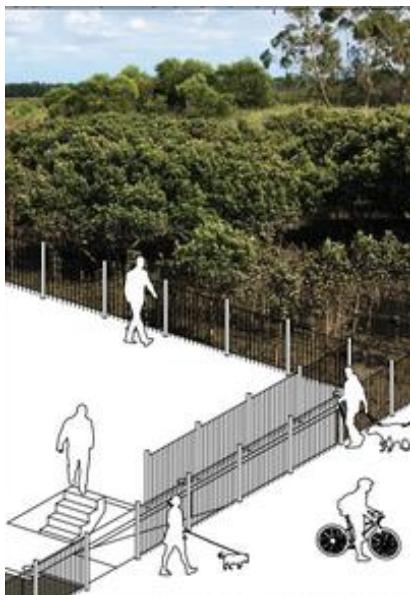
To build a state-of-the-art Nature Link Discovery & Research Centre in Tooradin

Incorporating:

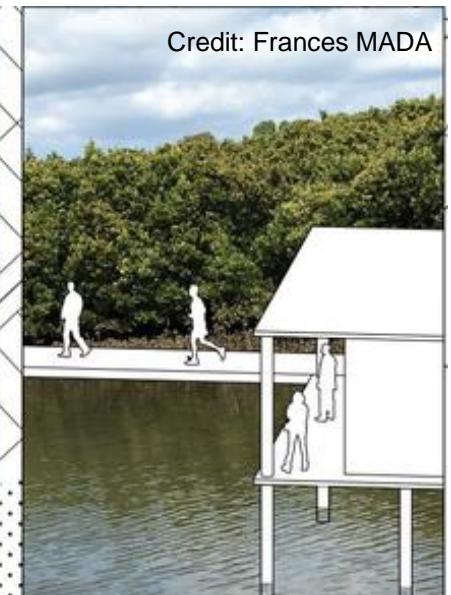
- Tourism Visitor Centre
- Community/Education Centre
- Climate Change/ Research Centre
- Access to waterway & boardwalks for un/guided nature experience tours
- Augmented/Virtual Reality technology
- Hempcrete building materials
- ‘Future Foods’ Plant Café
- Modern, clean amenities to draw tourism bus groups and travellers
- Powered by sustainable energy



Credit: Phillip MADA



Credit: Frances MADA



# Key stakeholders in the HPNL Tooradin Centre Project

## Federal government



Anthony Byrne MP  
Member for Holt

We are pleased to have received a \$20,000 grant from the Holt Communities Environment Program to help us to conserve, protect and manage our natural environment.

# Monash University



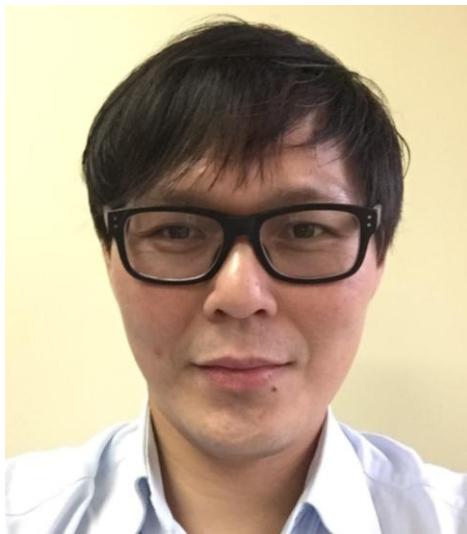
Nigel Bertram  
Art Design & Architecture



Maureen Griffiths  
Marketing

*\*Opportunity for a live branding/marketing project for  
the Tooradin Nature Link Centre in Semester 1, 2021*

# Federation University



Assoc Prof Shyh Wei Teng  
School of Engineering, Information  
Technology & Physical Sciences



Professor Erik Eklund  
History and Regional Studies

*\*Augmented and Virtual Reality Apps / History of Gippsland*

## Scientists/Educators



Harry Briedahl

One of the creators of the original Tooradin Marine Life Centre in 1980s.  
Director Nautilus Education, Australian representative UN Decade of Ocean Science for Sustainable Development, UN Ocean Literacy Summit 2020 [Link](#) Co-convener IPMEN 2021 conference [Link](#)



Josie Mulcahy (Seaweed Sally)

Aquatic Scientist, Director Southern Oceans Education [Link](#), Worked at the original Tooradin Marine Life Centre

## Scientists/Educators



**Jeff Weir OAM**

National executive Marine Education Society of Australasia, Founding Director Western Port UNESCO Biosphere [Link](#), Founding Board Member Dolphin Research Institute [Link](#)



**Ian Stevenson**

Chairman  
Westernport Seagrass Partnership  
[Link](#) [Video Documentary](#)



**Greg Hunt**

Executive Officer Western Port Biosphere Foundation [Link](#)

## Scientists/Educators



**Charles Kovess**  
Secretary Australian Industrial Hemp  
Alliance [Link](#), CEO & International  
Marketing Director Textile Composite  
Industries [Link](#)



**Colin Butler**  
President Cranbourne Shire Historical Society

*\*Hempcrete Building Materials*

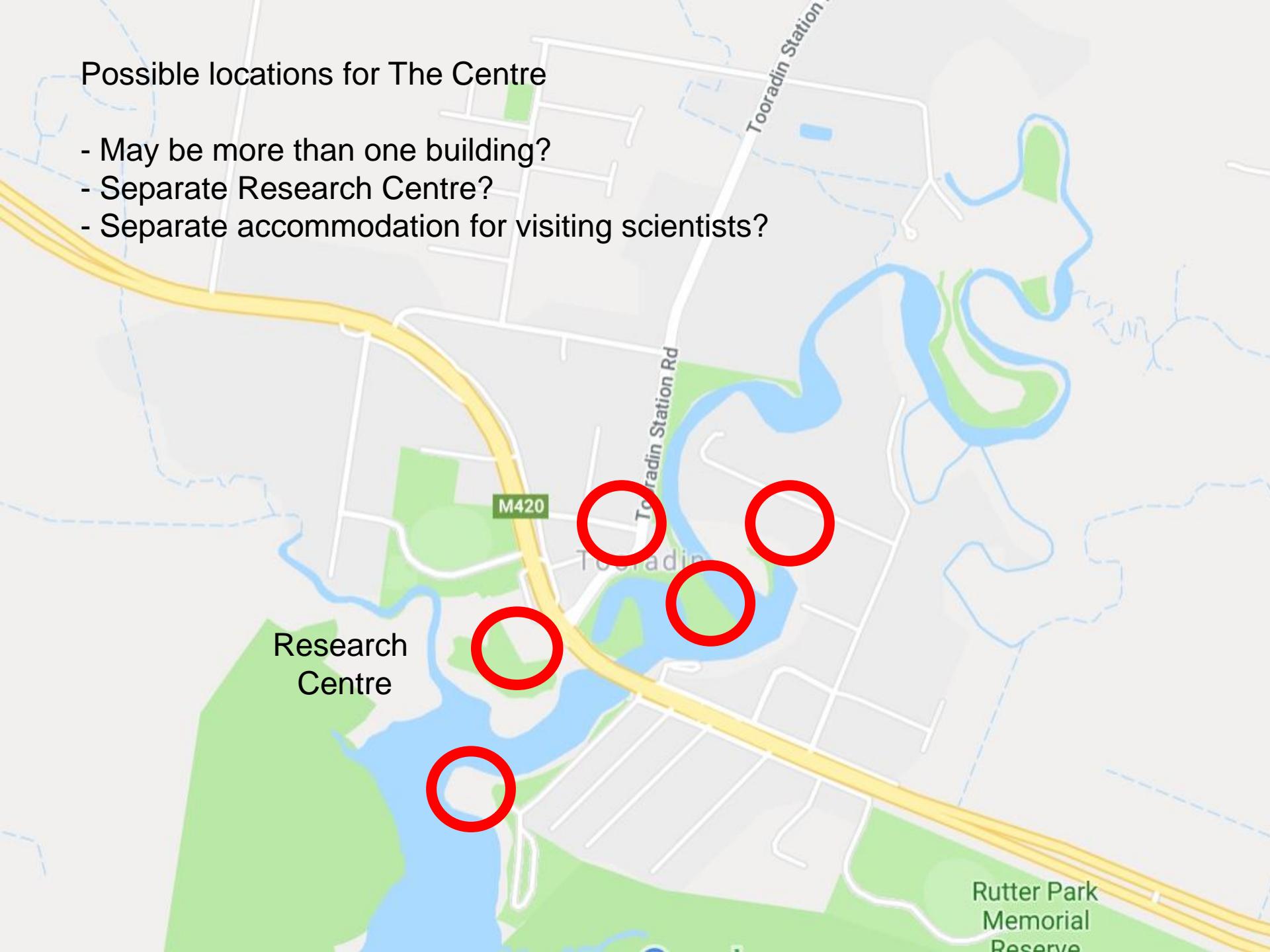
## Why Tooradin

- International RAMSAR convention on mangroves
- Central point for HPNL bio-link trail
- Tourism 'mecca' since late 1800's
- Halfway between Melbourne CBD and Phillip Island on a major tourism route
- Moonlit Sanctuary, Australian Garden/Royal Botanic Garden & Phillip Island Nature Parks nearby
- Established retail precinct
- Rebuild much loved Tooradin Marine Life Education Centre that burned down in 2002
- Only coastal area in City of Casey
- 400% population growth in nearby suburbs
- Local airport
- Local Helipad
- LoRaWAN network in place
- Casey Council is advocating for a pedestrian/bicycle network from Leongatha to Cranbourne
- Possible future Monomeith airport close-by?
- Possible future railway re-development from Cranbourne to Tooradin Station/Langtree Rd?  
\*Raised monorail to protect wildlife?
- Tourism infrastructure in place or planned  
\*Traffic flow, more parking, boardwalks, replacement bridge (Tooradin Town Plan)



## Possible locations for The Centre

- May be more than one building?
- Separate Research Centre?
- Separate accommodation for visiting scientists?



Proposed 'Walk The Heart of Tooradin' boardwalk connecting Yannathan Reserve, the peninsula walkway and main street traders.





Heart shaped 'tourist photo opportunity' seat at entry



Proposed  
boardwalk  
to connect  
Yannathan  
Reserve to  
the township

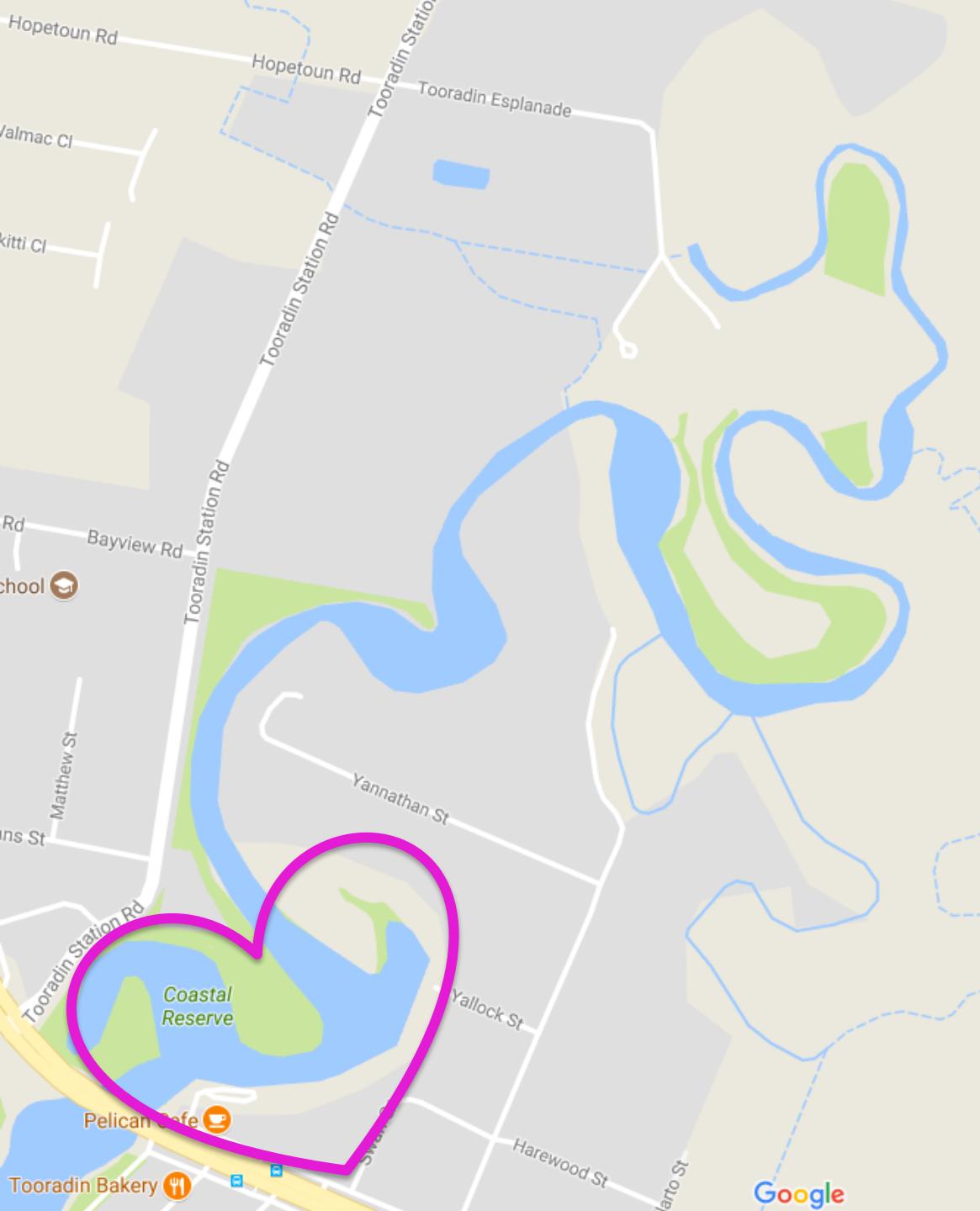


Yannathan Reserve



Credit: Western Port Biosphere





## Map of Sawtell's Inlet

Connect:

1. Tooradin station
2. Hardy's Rd
3. Arthur Ayers Rd
4. Inlet waterway
5. Proposed 'Walk the Heart of Tooradin' boardwalk
6. Tooradin retail district



Segway Boardwalk and Trail Tours



Water play on the inlet [Link](#)





Schiff

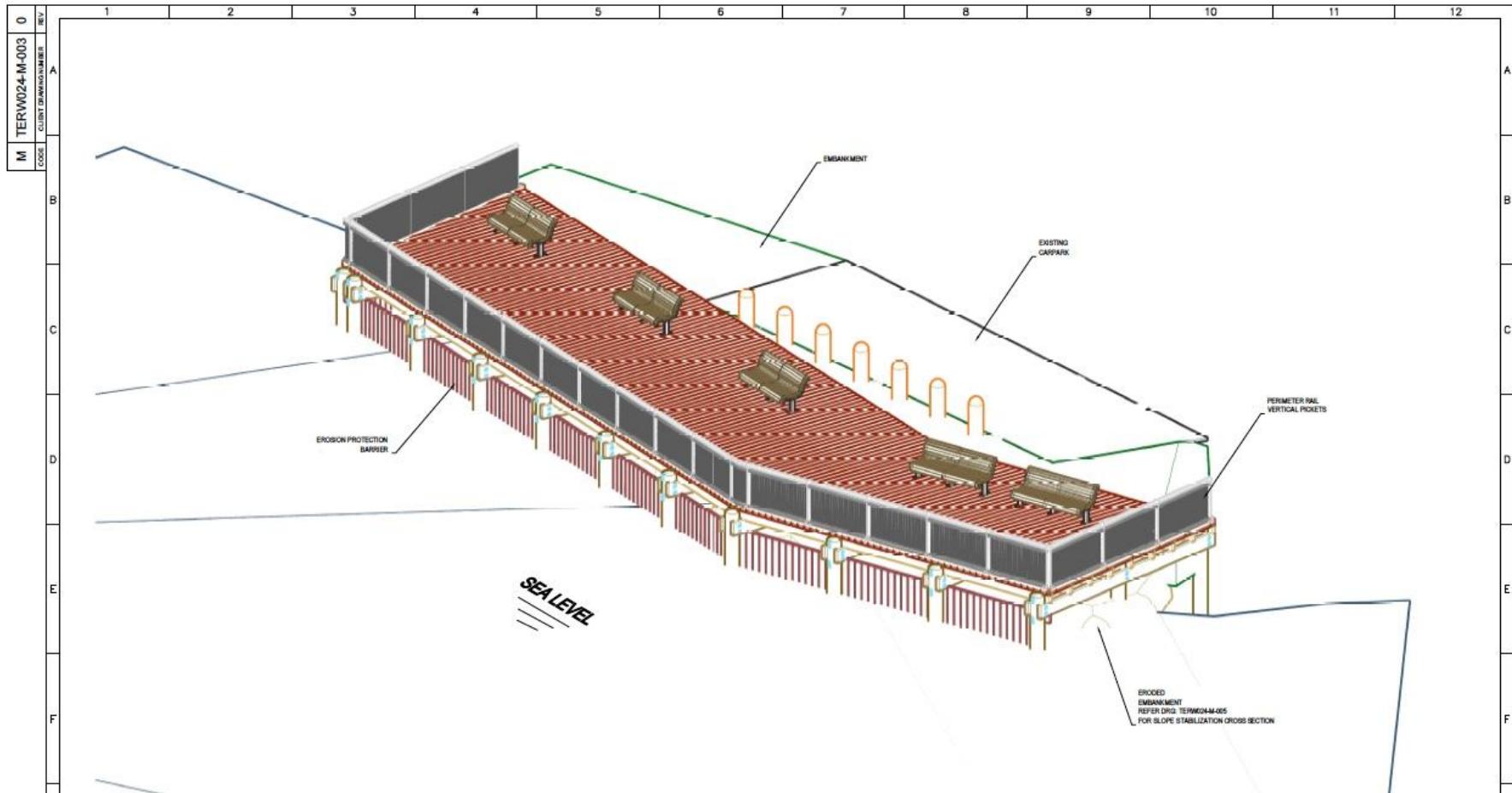
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SCHIFF 2



North side of Sth Gippsland Hwy - some business owners have begun or plan to create a retail precinct behind their shops, to feature the stunning views over Sawtell's Inlet.

Draft plans prepared to mitigate erosion in car park area outside Pelican Café, to build a floating pontoon for kayak/canoeists to enter/exit the water - includes a mechanism to lower disabled visitors into water craft so they too can enjoy the inlet





South side of Sth Gippsland Hwy: Discussion with Better Boating to replace the lower deck and create a floating pontoon to moor visiting boats



# I Sea, I Care Community - overlay on Tooradin



The roll out of the LoRaWAN Network (community and business-focused data and device communications network) has now been completed in Tooradin/City of Casey - designed to wirelessly connect battery operated 'things' to the internet. Monitors such things as parking availability, traffic management, BBQ facility availability, crime detection and more. [Link](#)





Tooradin Helipad, Helicopter Charter Services [Link](#)



Tooradin airfield [Link](#)

johnrf

Ideally positioned to take advantage of tourism trade flowing from proposed International Airport





### **Harry Briedahl: timeline of the original Tooradin Marine Life Education Centre on Sawtell's inlet**

- 1980: the Tooradin Education Support Centre was established in an old three-classroom Tooradin Primary School building.
- Although it was not recognized at the time, Tooradin was the first MDC in Victoria
- 1980 - 1985 the central classroom of the Tooradin Education Support Centre was a venue for both environmental education and marine education programs for local schools.
- At that time I was a seconded teacher at the Gould League of Victoria and worked part-time to develop and present the marine education programs at Tooradin.
- 1983 Three young marine scientists employed by the Victorian Institute of Marine Sciences (VIMS) to establish the Queenscliff MDC spent time working with me at Tooradin
- 2002 burned down



## Tooradin Vegetation Survey 07/06/2020

Led by Ian Stevenson, Dr Pat Macwhirter. Attendees; David Young, Brian Hughes, Marijke and Richard de Bever Price, Marlene Hargreaves, David Forscutt, Andrew Troedel, Andrew Titterington

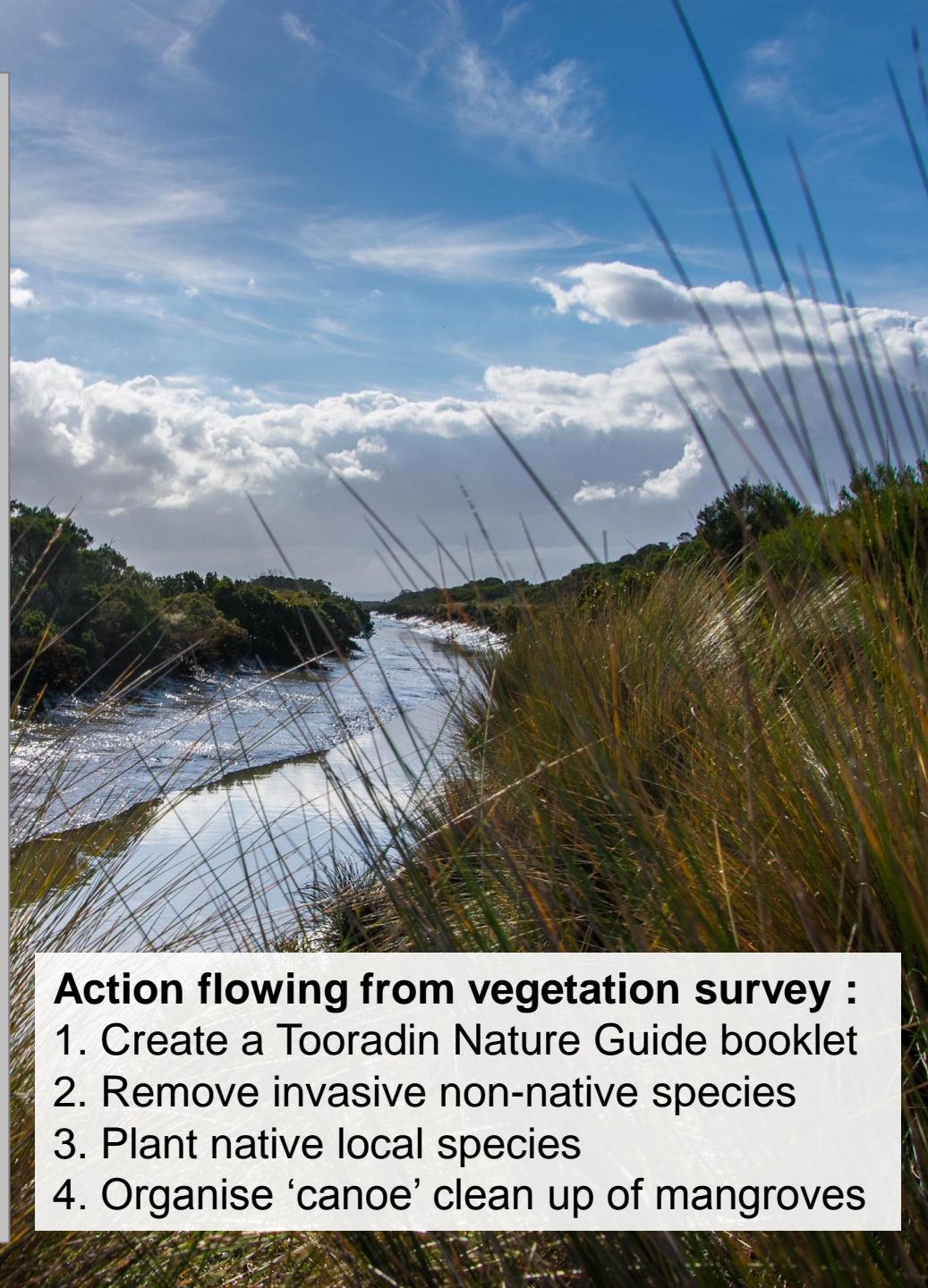




# Tooradin Nature Guide



HPNL INC



## Action flowing from vegetation survey :

1. Create a Tooradin Nature Guide booklet
2. Remove invasive non-native species
3. Plant native local species
4. Organise 'canoe' clean up of mangroves

# Tooradin Marine/Site(s) Survey 14/06/2020

Led by Prof Nigel Bertram and Marika Nevstupny MADA, Dr Pat Macwhirter. Attendees, Jeff Weir (DRI), Sue Bendahl, Lindsay and Irene Mitchell, Marlene Hargreaves



Pat and Nigel surveying the billabong in the centre of the peninsula walkway



From left: Jeff, Pat and Sue enjoying the walk and talk



From left: Lindsay, Sue and Nigel



## Action flowing from marine/site(s) survey :

1. Reference Sawtell's Inlet historical materials
2. Think in terms of *protection* and *regeneration* of the natural environment on a large scale
3. Request information from City of Casey and Cardinia Shire.
4. Identify key climate change questions the Research Centre will work on answering



## Smart City Advisory Team – Tourism Working Group (2019)

One of the areas of interest for the Smart City Advisory Team is the future of tourism in the City of Casey. There is a great opportunity to bring tourism into the future through merging with smart technologies.

To explore these opportunities a Smart City Advisory Team sub-group has formed with Ass. Prof. Shyh Wei Teng, Deputy Dean (Information Technology) and School of Science, Engineering & Information Technology and Marlene Hargreaves, member of the Australia China Business Council Tourism and Visitor Experience working group and President of Tooradin Business Association.

The first step was to arrange a visit to Tooradin in late December, to provide context and a better understanding of the township and its history.

Prof. Erik Eklund, Ass. Dean Research and Director, Centre for Gippsland Studies, School of Arts, Federation University and Dr Pat Macwhirter, President of the Healesville to Phillip Island Nature Link (HPNL) and owner of Harewood Homestead also joined the conversation.

One of the interesting initial ideas discussed was the use of technology to bring Tooradin's history to life by digitising books, images and documents. Augmented and blended reality technologies also present exciting experiences for students and tourists alike.

Also featured in the discussions was the Monash University student concept designs for a new Nature Link/Research Centre.

Next steps, Federation University academics will consider the wealth of information provided about our township's past, present and future and formulate some ideas for further discussion.

For more information about Tourism and the Digital Transformation, please visit United Nations World Tourism Day [Link](#)



Credit: UNTWO



Credit: [Link](#)

## Virtual and Augmented Reality for education

VR/AR is a new industry that has the potential to become a staple tool for education and training, and the benefits both inside and outside the classroom are only now being discovered.

VR/AR software companies are transforming how educational content is delivered and consumed globally by providing educators the tools they need to create their own content in virtual classrooms or virtual training environments.

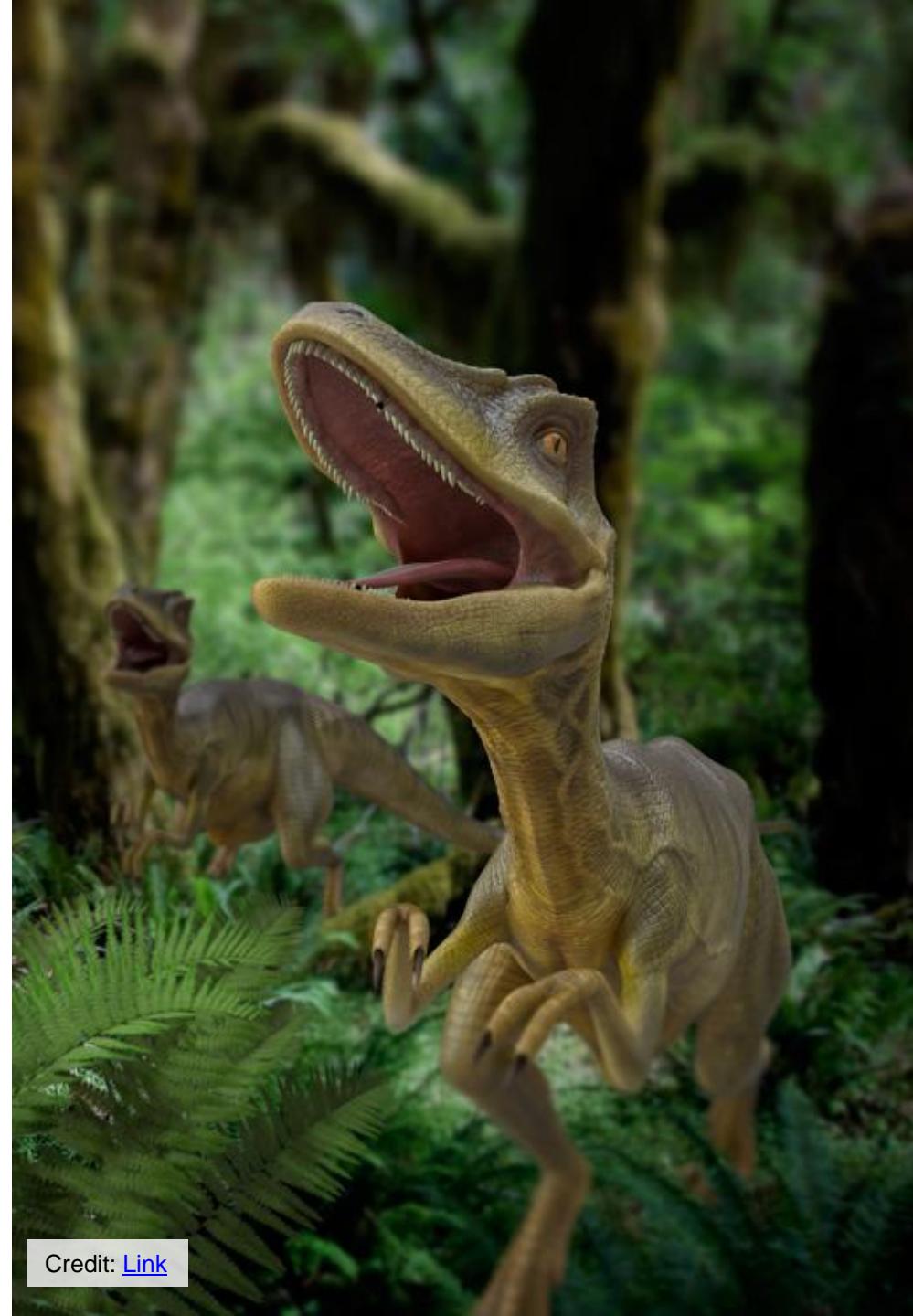
One such company, [Immersive VR Education](#) believes that VR and AR has the ability to change students outlook on the world and their place in it. They have released a range of educational experiences and won many international awards for their educational software.

Another innovative company [Meta Vision](#) has created the most advanced headsets on the market. The Meta 2 Is made for AR App Development and arrives with features and capabilities designed for developing unique AR experiences. With a 90° field of view (FOV) the widest on the market, it offers an immersive experience with photorealistic holograms.

Holographic 3D Content You Can Touch: Whether building 3D architectural models or learning about human anatomy, you can touch, grab, push, and pull stunning 3D holograms in the Meta 2.

Enhance the World Around You: The Meta 2's powerful optical engine overlays high-resolution photorealistic content on the physical world, while the clear visor enables you to see your immediate environment and let you make eye contact with those around you.

[Video](#) [Video](#) [Video](#) [Video](#)



Credit: [Link](#)

## National Geographic's Ocean Odyssey adventure

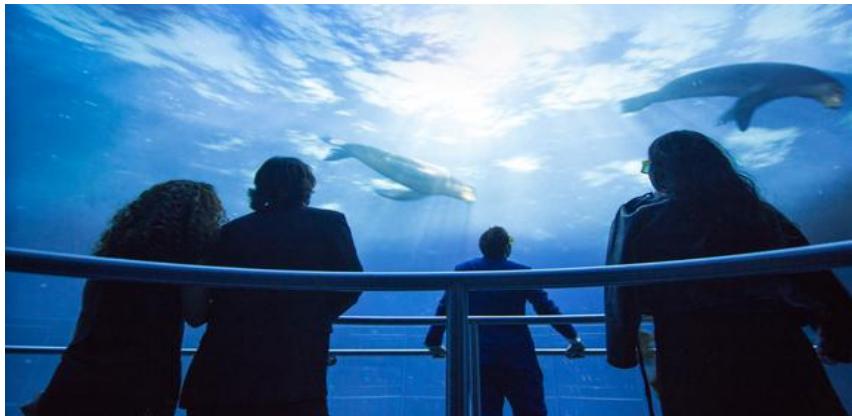
A new kind of undersea adventure awaits! Instead of taking animals out of their homes, Nat Geo Encounter's groundbreaking technology transports the visitor to theirs, using stunning photo-realistic animation that gives access to rarely witnessed moments in nature. The Encounter journey begins as a guided tour, where visitors experience a battle between two ferocious Humboldt squid, visit a luminous coral reef at night, and more. Once you "swim" through a kelp forest, you'll continue at your own pace, as you find yourself in the middle of a magnificent feeding frenzy and get up-close with a life-sized 50-foot humpback whale.

You'll then dive even deeper on your adventure in Exploration Hall. Hear breathtaking stories from Nat Geo photographers and deep-sea explorers. Take on ocean gaming challenges. Learn about the sea's greatest wonders and mightiest creatures. And discover how you can be a champion for our oceans in everyday life.

Developed and produced by the creative minds at SPE Partners, with a team of Academy, Emmy and Grammy Award-winning artists, Encounter is an unforgettable immersive experience certain to thrill explorers of all ages.

[Video](#)   [Read more](#)   [Website](#)







### Magic Leap mixed and augmented reality technology

Inspired by visionaries from a variety of industries, Magic Leap unlocks new creative possibilities and compelling experiences in spatial computing. MUST SEE! Whale leaps out of gymnasium floor [Video](#)

Image Alex Boch

## The Big Picture: Tooradin & Local Community Benefits

- Create an internationally recognised bio-link corridor with Tooradin at the heart
- Identify/position Tooradin as a world class eco-tourism destination
- Build a state-of-the-art education facility
- Presentations by local/ international environmental scientists/educators
- Establish a research facility to address environment conservation/climate change concerns
- Increase local employment
- Potential rise in property values
- Potential economic benefits for local & surrounding businesses
- Create a strong economic and sustainable environment for next generations - with effects reaching far into the future.



A new way to "grow" islands and coastlines (Skylar Tibbits | TED2019 [Link](#)



HPNL Advocacy to save the Holden Proving Ground and Grantville Grass Trees – “the magic forest” [Link](#)



13 June 2020

Dear Premier Andrews,

I represent Healesville to Phillip Island Nature Link Inc <http://www.h pnl.org.au> a citizen's advocacy group working to create a bio-link of national significance connecting three of Victoria's iconic ecotourism attractions (Healesville Sanctuary, Puffing Billy and Phillip Island Nature Parks) via natural corridors on public and private land.

The HPNL is designed to encourage preservation and mitigate threats to our natural and cultural assets including some of our most loved and iconic plants, animals and places. HPNL Inc. would like to add our voice to the large chorus of citizens and environmental groups calling for our state/Federal/local government to acquire the former GMH Proving Ground site at Lang Lang as a central feature of a Western Port National Park.

We appreciate that there may be a mix of use but the critical element is that the government acquire the land at this critical time so that the community is able to decide what this mix (conservation, tourism, jobs, recreation) should be and that the unique biodiversity and open space values of this site, particularly as part of a landscape wide Healesville to Phillip Island Nature Link, are not lost.

Time is of the essence as the site is currently being advertised for sale by GMP and we are very much concerned that it may be acquired by foreign investors or others who are not part of our community and have limited knowledge or regard for the unique and high conservation/biodiversity value of the site including;

- This is the last parcel of significant size of preserved forest in the Western Port region
- That coastal forest forms a very important part of the environmental health of bays and shorelines
- That a number of endangered fauna and flora have been identified within the boundaries of the site
- That forest habitat has been all-but cleared from the Bass Coast region and
- That to acquire the site will protect a key link in a significant Bio-link corridor in the Bass River catchment area extending into Cardinia Shire

I understand that Jordan Crugnale, MHR for Bass has been in discussions with you and Minister Dambrosio regarding the site. If there is any way in which we could assist in facilitating a favourable outcome could you please advise.

Kind regards, Pat

# “What mushrooms are edible?”

Dr Mary Cole Consultant Mycologist & Plant Pathologist.



This autumn and early winter have been wet and cool. Fungal species have been blooming all around Australia in profusion. This has created great interest in identification and edibility of the many species. During the past couple of months I have been receiving 20 to 30 photos each week by email and test asking for identifications and edibility status. Of those many species there are a few that make up 95% of specimens wanting identification. In this article I will give a simple explanation that should help with identification.

Field mushrooms, *Agaricus* species are common at the moment on fields and gardens. The presence of fungi is a sign of a healthy environment. The fruiting bodies are the part of the fungus that produce spores that drop to the ground, are blown in the wind or moved around by insects and animals. Most are not edible, some are, and a few are poisonous.

**Never** eat a field mushroom unless it has been correctly identified by an expert. Some of our Australian species look similar to European species but are, in actual fact, poisonous.

**Always** cook fruiting bodies as soon as they are collected even if they are not eaten immediately. They can be refrigerated or frozen.

The pictures below field mushrooms that are good to eat, fresh or dried for soups.

Field mushroom – *Agaricus* sp. Edible

Picture 1: A young specimen has pink gills because the spores are immature



Pictures 2 & 3: A mature specimen has purple brown gills because the spores are mature. Edible.



If you have not eaten a particular mushroom before then eat just one teaspoon full and wait for 24 hours. If there has been no reaction then the cooked mushrooms can be eaten. Some people have allergies to the mushroom material or more often to bacteria on the Fruiting bodies.

Are these field mushrooms?

The field mushroom is recognisable as having a whitish cap, reasonably chunky size and shape, pink gills when young and dark purple brown when older. It is the spores that give the gills their colour. There is a ring or skirt on the stem and the gills meet the cap not the stem so that the stem is easy to twist off the cap. The cap may be smooth or have brown scales over the surface.

There is a group of field mushrooms called yellow stainers. Their description is the same as for true field mushroom. The only difference is a yellow stain that develops when the cap and stem are gently bruised with your finger nail. If any yellow colour develops then this identifies the yellow staining *Agaricus Xanthodermus* which is mildly poisonous. Eating this species can cause severe vomiting and diarrhoea. Hospitalisation on a drip can be an outcome.

Picture 4, 5, 6 *Agaricus Xanthodermus* – yellow stainer. Not Edible



*Lepiota* species or not?

*Lepiota* species are edible and delicious both fresh and dried. They are tall and large with brown scales in the cap. The stem has a ring or skirt and the gills meet the cap not the stem. The gills remain white to maturity because the spores are white. You will notice these characters are similar to the field mushroom except that the gills and spores are white.

Pictures 7 & 8      Lepiota procera or Lepiota rhocoides. Edible



*Chlorophyllum molybdites* look identical to the species. The only difference is the spores at maturity are green. This mushroom is poisonous and must not be eaten.

Pictures 10 & 11      *Chlorophyllum molybdites* – notice the greenish gills. Poisonous



If collecting *Lepiota* species or what you think are *Lepiota* species, first place a mature cap gills down on a piece of white paper. Cover with a bowl and leave overnight. Look at the colour of the spore print. If it is green, do not eat those fruiting bodies. You have the poisonous *Chlorophyllum molybdites*.

# World Environment Day: City of Casey Zoom conference 05/06/2020

Simon King, David Westlake, David Holmgren

World Environment Day 2020, Friday 5 June, a day recognised by the United Nations Day for encouraging awareness and action to protect the environment. This year has been identified as a critical year for preserving and restoring biodiversity. As a part of this years celebrations, our special guest speaker David Holmgren presented his film "Aussie Street" followed by a question and answer segment.

David Holmgren, permaculture visionary and story teller, presented his vision for self-sustaining suburbs in his talk 'Aussie Street'. David is known for creating the system of permaculture in the late 1960s, alongside Bill Mollison, which has now become a worldwide movement. Personable, plain speaking and insightful, Holmgren shed light on the concept of permaculture, and share ideas on living a self-sufficient life. In 'Aussie Street', David took us back through the decades in a single Australian street. From the post-war 'Aussie Dream' on the quarter acre block, through economic rises and falls, people and houses age and change, outlining an inspiring and realistic transformation to adapt to possible changes in the years to come. The entertaining stories of Aussie Street are made real by masterful story telling that plays out as a 'permaculture soap opera'.

This story sounds a warning for our current food and energy systems, but also provides a vision for direct action anyone can take. The presentation is a window into the rich palette of design solutions and tips that Holmgren has explored in in his latest volume, *Retrosuburbia*; the downshifters guide to a resilient future.

If you want more information about David, the book, permaculture or related, below are some good resources to start with. His parting advice in getting started on retrofitting suburbia was to audit your home – what are the opportunities? What useful skills do family members have in order to increase resilience? What skills do they need? What opportunities are there with the existing house and out-buildings that you have, as well as the garden? What can be easily changed? Instead of dreaming about the time where you might buy the 'perfect place', instead, go about making where you are into the perfect place.



Credit: [Link](#)

David's 'Aussie Street' presentation in Morwell 2019:

[Link](#)

Q&A from Morwell 2019 presentation:

[Link](#)

Retrosuburbia Book and Casey studies: [Link](#)

Green Living in Casey Facebook Group: [Link](#)

City of Casey's Naturestrip Guidelines: [Link](#)

# The Global Alliance for the Rights of Nature



GARN is network of organizations and individuals committed to the universal adoption and implementation of legal systems that recognize, respect and enforce “Rights of Nature”.

They are currently working on updating their member's information and membership database.

If you/your organisation would like to join, they are reaching out to ask for the logo of your organization in PNG format.

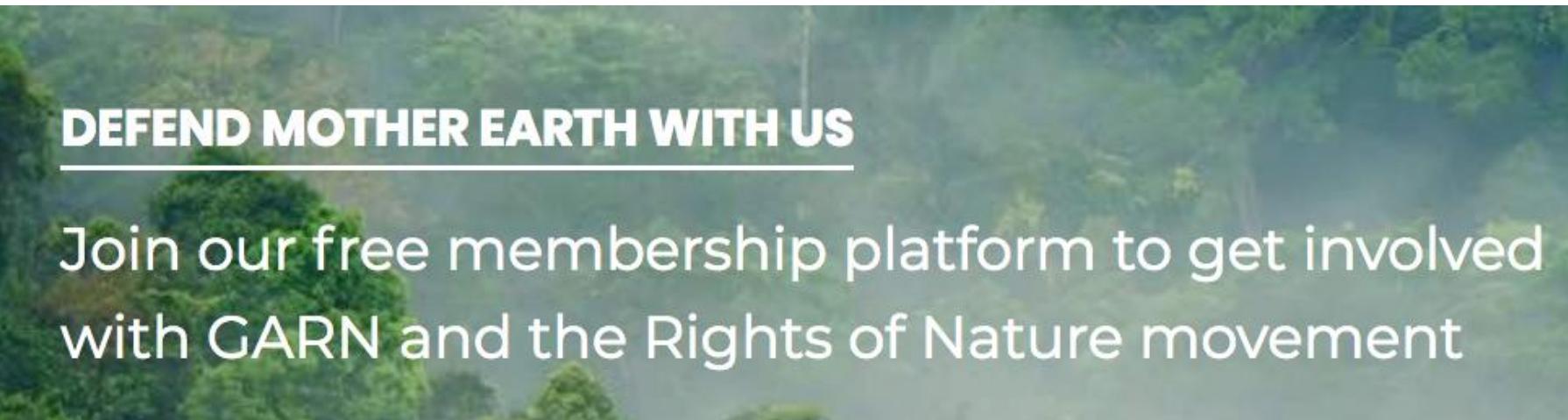
They will soon launch a new platform called “Untold Stories” [Link](#)

They invite participation in this platform which gives people a creative space to tell the stories of what Nature is saying during these trying times. They would love it if you share Rights of Nature stories and anything related to what is going on in nature in your region!

Finally, they would also like to inform everyone that they have created an interactive map about Rights of Nature worldwide, which you can access throughout the following [Link](#)

If your organization does not appear on our map, please help us completing the following google form, in order to allow us to have the correct information about your organization: [Link](#)

Please write to [organizer@therightsofnature.org](mailto:organizer@therightsofnature.org) or visit their webpage for more information [Link](#)



# Can hemp growing in Australia have a ‘biological’ future?

Dr Mary Cole, Director & Principal Scientist, Agpath P/L



*The appearance and impact of COVID-19 in 2020 is a wake-up call for humanity.*

The microbial populations of the earth have been around for billions of years and have coping strategies that humanity can only dream of attaining. As the world moves out of the pandemic and the population considers a new world order, now is the time to look at clean food and fibre production where nutrient value is considered and foods free from contaminating chemicals are made available across the globe.

*Australian hemp growing can position itself into the biological paradigm as the cleanest available.*

There are choices available in agriculture: conventional chemical input, biodynamic, organic and also biological. The first three are well established and have been part of the agricultural scene for decades.

**Biological farming** has been around for 10,000 years up until synthetic chemicals such as super phosphate in 1843 and ammonia in 1909. It is the style of farming carried out by our ancestors where everything was reused into food production – animal and human manures, plant scraps and residue – all were recycled back into the soil. The soil was farmed and protected by observation and intimate use of the land during the seasons. The food was nutritious.

*Our ancestors did not know the science but they understood the link between soil, season and production.*

Our ancestors did not know the science, but they understood the link between soil, season and production

Then came synthetic chemicals ... the farmer lost intimacy with the soil ... people in cities lost their relationship with the land ... food production became industrialised.



Medicine



Food



Fibre



Hurd

Then came the synthetic chemicals that could be applied by a contractor from a tractor without ever touching the land.

The farmer lost the intimacy with the soil.

People in cities lost their relationship with the land.

Food production became industrialised.

**Biological farming** is attempting to redress this move from the land. Biological farming practices look to protect and improve the soil biota before anything else. The soil food web is the community of organisms that live mostly in the soil that draw their nutrients from the mostly above ground primary producers that use the energy of the sun to fix carbon dioxide from the atmosphere. From a complex series of energy conversions microbes form a food chain as is demonstrated in the diagram "Soil Food Web" below and make available the nutrients required by plants to grow healthy, disease free and nutrient dense.

*The hemp industry is well placed to take up biological farming concepts in its production of over 25,000 different products coming from hemp.*

The huge amount of organic matter produced in a short growing cycle can be the basis of an efficiently functioning soil food web producing hemp products chemical free or close to it.

*This would give Australian hemp products a competitive advantage around the world.*

Now is the time to look at this paradigm shift when the world is seeing the power of the microbial world.

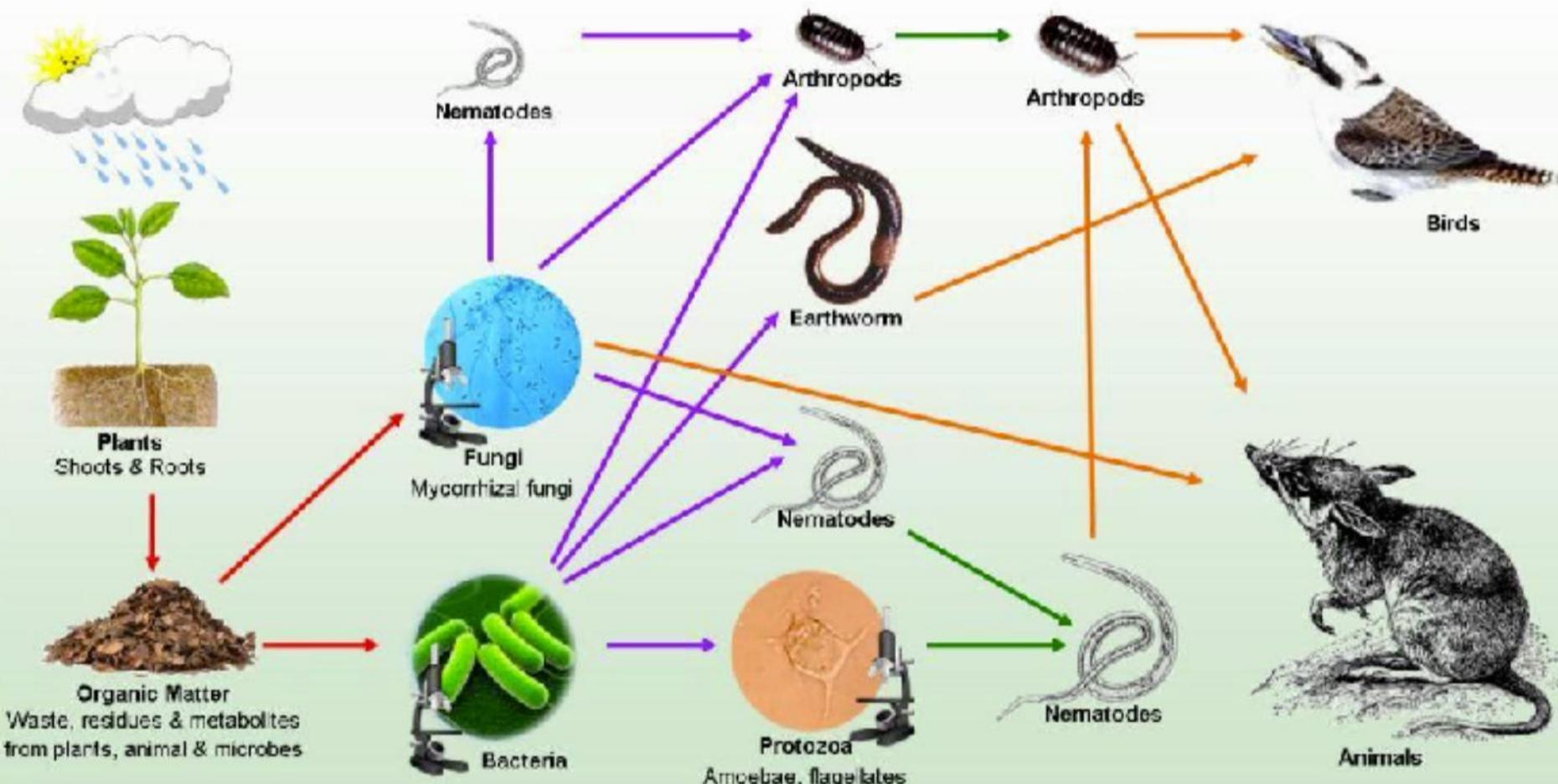
It is time to embrace this power and work with it not against it as we have been doing for the past 200 years.

Now is the time to look at this paradigm shift when the world is seeing the power of the microbial world.

This would give Australian hemp products a competitive advantage around the world

*Dr Mary Cole PhD MAIA, MAIEA, MSA, MGAIAC Director & Principal Scientist, Agpath Pty Ltd. Consultant Mycologist/Plant Pathologist Agpath Pty Ltd is a proud, Corporate Member of the AIHA*

# Soil Food Web Flow Chart



**First trophic level:**

Photosynthesisers

**Second trophic level:**

Decomposing Mutualists  
Pathogens, Parasites  
Root-feeders

**Third trophic level:**

Shredders, Predators  
& Grazers

**Fourth trophic level:**

Higher level predators

**Fifth & higher trophic level:**

Higher level predators

# HEMP

## Healthy

### Products, People, Planet, Profits



Food



Clothing



Building



Medicine



Fuel



Fertiliser



Composite fibre



Body care



Rope, twine



Packaging

Our Ecosystems: Our Home: Stephen Curtin on Dr Alex Costin, a soil scientist [Link](#)

# Our Ecosystems: Our Home

# Bushfire royal commission told Aboriginal people routinely ignored in post-disaster commissions

ABC News: national regional and rural reporter Jess Davis [Link](#)

The bushfire royal commission has been told that Indigenous land management is critical to preventing catastrophic bushfires but that in the past, Aboriginal voices have been ignored.

Euahlayi man and ANU researcher Bhiamie Eckford-Williamson told the commission that the Black Summer bushfires created extraordinary public interest in Aboriginal people's land management practices, especially burning.

"There are a number of popularly held misconceptions that we need disabuse ourselves of if we are to understand this practice," he said.

"Whilst popularly known as traditional burning, cool burning, Indigenous burning, etcetera, the practice is actually cultural land management. Burning is but one tool Aboriginal land managers may use to manage their country."

Mr Eckford-Williamson also told the commission that Aboriginal people must be involved in any cultural land management. "Notwithstanding that there may be common elements and principles of cultural burning shared between Aboriginal groups, the key ingredients, the thing that makes it cultural burning is controlled by Aboriginal people," Mr Eckford-Williamson said.

"Cultural land management is not an add-on or an enhancement, it's not a practice that can simply be grafted onto the regime of non-Indigenous land managers."

## Aboriginal people ignored

Mr Eckford-Williamson told the commission that his research showed Indigenous people were disproportionately impacted by the Black Summer bushfires and their voices must be listened to. "The impact of disasters such as bushfires disrupts the existence of Aboriginal peoples, indeed the destruction of landscape features, whether they be plant species, native animals or cultural heritage sites," he said. "In post-disaster commissions, Aboriginal people were ignored and not listened to and specific recommendations were not made to engage with Indigenous people. [Read more](#)

## Key points:

- Commission told Indigenous people must be involved in cultural burning practices
- Calls for long-term funding to support Indigenous land management



Slower, cooler burns spark renewal and "balance" to the way country is managed .(Supplied: Lyndall Scobell)

A photograph of a bridge spanning a body of water during sunset. The sky is filled with warm orange and yellow hues, with the sun low on the horizon. Silhouettes of trees are visible in the foreground and along the shoreline. A small green dot, likely a lens flare or a bird, is visible in the upper left quadrant.

Next meeting:  
Zoom conference  
Tuesday June 30  
7:30 pm

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