



HPNL HEALESVILLE / PHILLIP ISLAND
NATURE LINK

Newsletter Late Summer/Early Autumn 2021



PHOTOGRAPHY

Healesville to Phillip Island Nature Link Inc President's Letter April 2021



"We acknowledge the traditional custodians of country throughout Australia and recognise their continuing connection to land, waters, and community. We pay our respects to them and their cultures; and to their Elders past, present and emerging."

Just back from a delightful afternoon listening to Tooradin-born natives Beryl Madden and Dale Adams relate stories of four generations of fishermen, farmers and townfolk who were the early families in the community and their relationship with the Tooradin environment. They described going to school at the site we have planned for the environment/community/research centre with koalas in the nearby trees and their fishermen fathers and uncles returning with huge catches of whiting, mullet and garfish.

Some of their stories will be incorporated in *The Nature of Tooradin* book that HPNL is compiling as part of our CEP grant. We are planning a community planting day, in conjunction with the Tooradin foreshore committee, next to Beryl's property on the western side of the Tooradin Inlet.

As you will see in another of Marlene's bumper newsletters, we have been working with the Monash School of Art, Design and Architecture and N'arweet Dr Carolyn Briggs, senior elder and Chairperson of the Boon Wurrung Foundation in developing plans for the Tooradin environmental/community/research centre.

This nests into a larger scale understanding climate and sea level changes and the impact these are having and will continue to have on the former Dalmore and Koo Wee Rup Swamp areas. The bike ride from Bunyip to Tooradin, which is described elsewhere in this newsletter, was a nice pace to understand issues relating to this landscape.

Alongside the nuts and bolts of designing the centre, we have now had 3 workshops taking a two hundred years' back and forward perspective and looking at ways human assets can be protected while allowing water flow and important natural processes to take place.

We have been informed by N'arweet Carolyn's indigenous perspective as well as best practices, such as 'sponge cities' in China that are similarly faced with naturally flood prone landscapes and challenges associated with climate change and sea level rises.

Some routes that HPNL had already identified as key biolinks/wildlife corridors in our strategic plan have long Indigenous connections and the possibility of walking trails reflecting Indigenous history of the area is being discussed.

Cardinia Shire Biolinks Plan

Cardinia Shire has now published their draft Biolinks strategy. See [LINK](#)

Out of 15 indicator species selected, the list was pared down to Greater Glider in the north and Southern Brown Bandicoot in the south with Eastern Yellow Robin throughout.

Please have a look at the logic for these choices on p12 as well as the overall thrust of the strategy. Rob Jones' team and Cardinia Shire Councillors are to be congratulated for being prepared to invest money to get solid science as well as community engagement in developing this strategy, it is practical and foresightful, balancing challenges including fire-risk and urban development with a desire to preserve indigenous habitat connectivity and native wildlife in perpetuity.

Please add your input and insights. There is tweaking to be done and the strategy needs to link in with Casey, Bass Coast and Yarra Ranges but thank you Rob and councillors, this is a huge step forward in achieving HPNL's goal of landscape-wide wildlife habitat connectivity amid the challenges of urban development and bush fire mitigation.

Cardinia Creek Revegetation

Our contribution towards this has been progressing with a grant from Melbourne Water, the goal being for this to be linked with the lower Cardinia Creek and Tooradin as well as the upper reaches of Cardinia Creek and the Cardinia Reservoir. A community planting day will be happening this winter, along side work being done by contractors.

Our next Zoom meeting will be on Wednesday 28th April at 7:30 pm, invitation as follows.

Pat Macwhirter is inviting you to a scheduled Zoom meeting.

Topic: HPNL Meeting

Time: Apr 28, 2021 07:30 PM Canberra, Melbourne, Sydney

Join Zoom Meeting [LINK](#)

Meeting ID: 882 9893 7839 Passcode: 943528

Looking forward to seeing you there.

Best wishes,

Pat Macwhirter



The history of Tooradin chat for the upcoming "Nature of Tooradin" book - from left: Beryl Madden, Pat Macwhirter, Colin Butler and Dale Adams. Photo Marlene Hargreaves

Newsletter Summer 2021

MONASH UNIVERSITY URBAN
LAB

HPNL HEALESVILLE / PHILLIP ISLAND
NATURE LINK

Report from Workshop #2, Monday, March 1 2021 for proposed

TOORADIN

RESEARCH • ENVIRONMENT • COMMUNITY
CENTRE

Monash Urban Lab Workshop #2 Participants

Catherine Murphy: Monash Art, Design, Architecture | Urban Lab [LINK](#)

Prof Nigel Betram: Monash Art, Design, Architecture | Urban Lab [LINK](#)

N'arweet Dr Carolyn Briggs AM: Boon Wurrung senior elder, Chairperson Boon Wurrung Foundation [LINK](#)

Louise Wright: Architect | architecture that is connected to a local physical environment [LINK](#)

Rutger Pasman: CHORD studio | Monash Urban Lab [LINK](#)

Jon Shinkfield: REALMstudios | Urban design and landscape architecture [LINK](#)

Gyöngyvér Engloner: REALMstudios | Water, Architecture, Ethnography, Deep history [LINK](#)

Watkin McLennan: REALMstudios | Graduate landscape Architect [LINK](#)

David Mason: Graduate Architect | NMBW Architecture Studio [LINK](#)

Dr Jeff Yugovic: Botanist | Biosis Research [LINK](#)

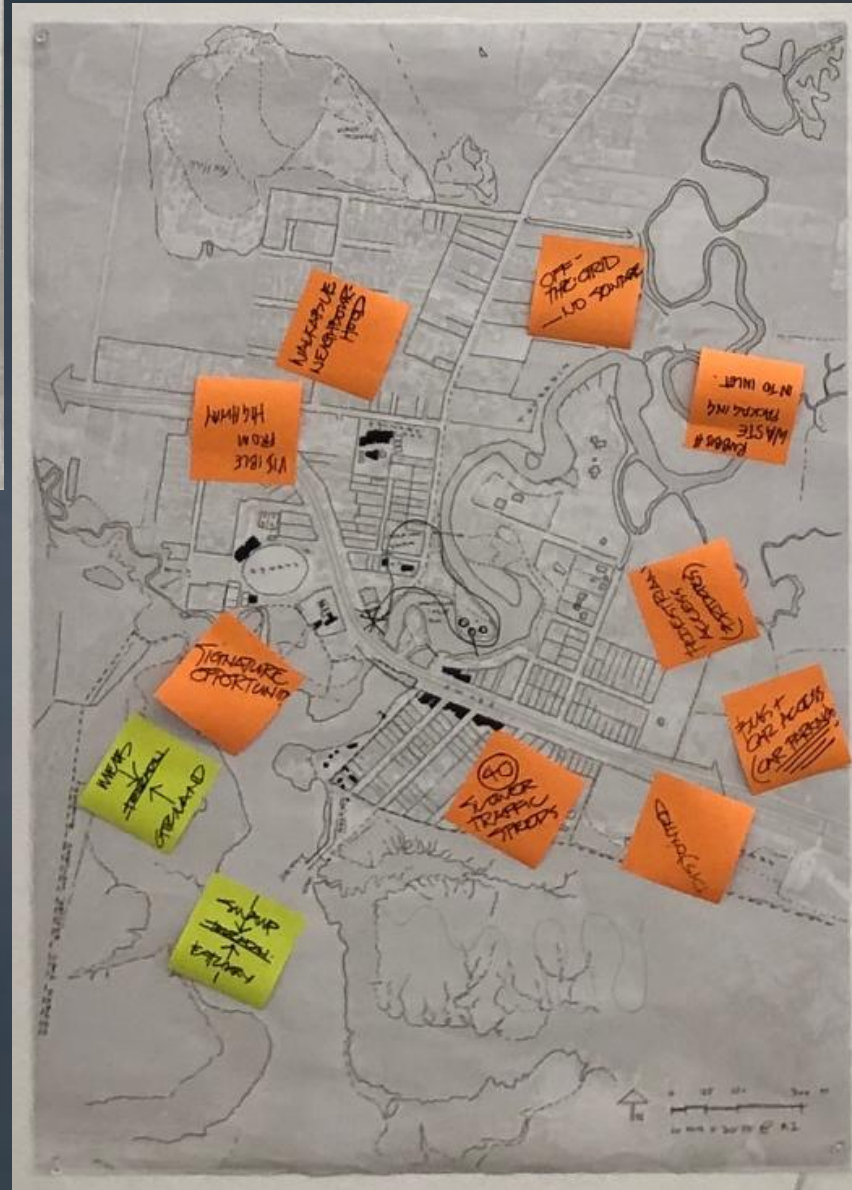
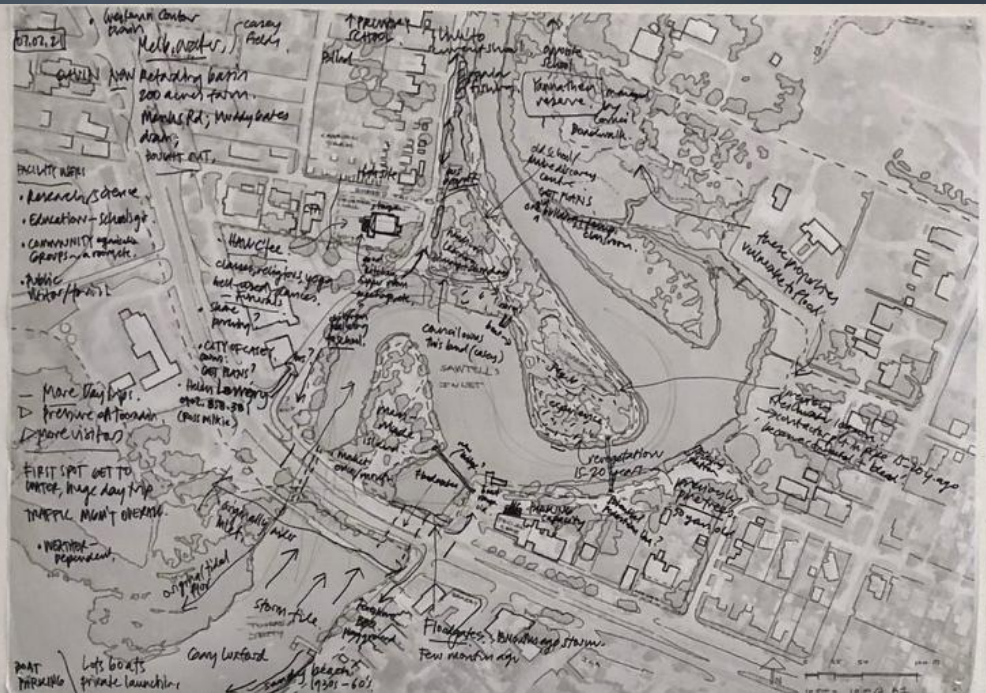
Dr Peter Breen: CRC for Water Sensitive Cities/E2Designlab | Development of water sensitive cities [LINK](#)

Dr Pat Macwhirter: Bird Vet Melbourne | President, HPNL Committee [LINK](#)

Dr Mary Cole: Agpath Lab | Vice President, HPNL Committee [LINK](#)

Marlene Hargreaves: EcoFuture | Marketing, HPNL Committee [LINK](#)


Notes from Workshop #1 (pictured) and materials for Workshop #2; Boon Wurrung RAP Map, Great Koo Wee Rup Swamp, Melbourne Water and other maps referred to during discussions



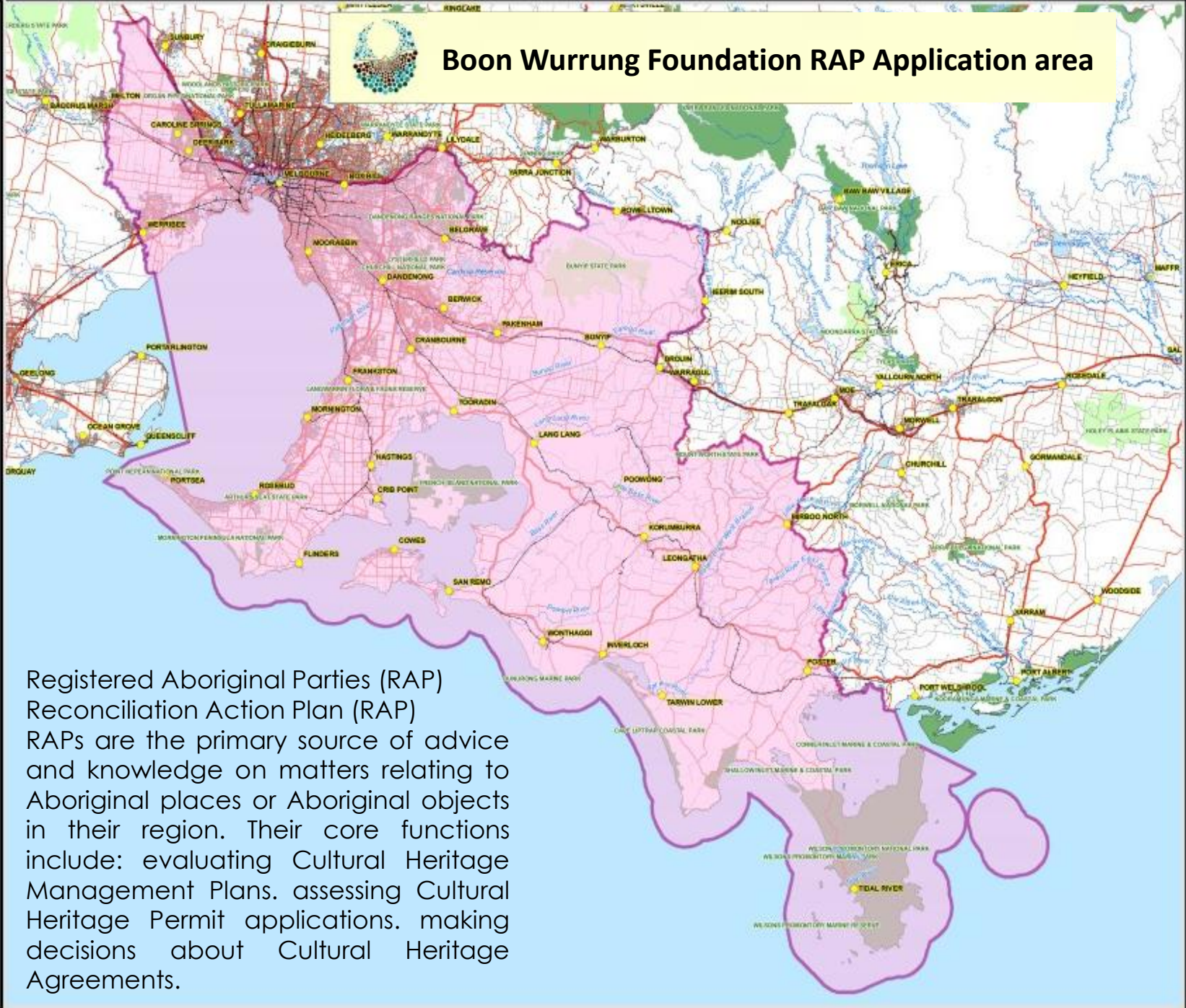
REGISTERED ABORIGINAL PARTIES
 Boon Wurrung Foundation Ltd
 -Application Area



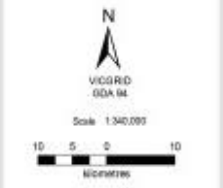
- Legend**
- Boon Wurrung Foundation Ltd
 - Towns
 - Railway
 - Waterways
- Roads**
- Freeway
 - Major Road
 - Minor Road
 - Local Road
- Parks & Reserves**
- National Park
 - State Park



Boon Wurrung Foundation RAP Application area



Registered Aboriginal Parties (RAP)
 Reconciliation Action Plan (RAP)
 RAPs are the primary source of advice and knowledge on matters relating to Aboriginal places or Aboriginal objects in their region. Their core functions include: evaluating Cultural Heritage Management Plans, assessing Cultural Heritage Permit applications, making decisions about Cultural Heritage Agreements.



The information contained on this map is for general information only. It is not intended to be used as a basis for any legal or other action. The Boon Wurrung Foundation Ltd is not responsible for any errors or omissions on this map. For more information, please contact the Boon Wurrung Foundation Ltd.

The Great Dalmore Koo Wee Rup Swamp



From left: Peter Breen, David Mason, Pat Macwhirter, Watkiin McLennan, Rutger Pasma, Catherine Murphy, Nigel Bertram, Louise Wright, N'awet Carolyn Briggs, Jeff Yugovic, Jon Shinkfield, Gyöngyvér Engloner, Mary Cole. Photo: Marlene Hargreaves



Pat Macwhirter, Rutger Pasma,



Jeff Yugovic, Nigel Bertram60



Pat Macwhirter, Mary Cole



Summary stage: reviewing discussion points and determining the hierarchy of priorities and next steps



What is the desirable outcome 200 years from now?

What is a realistic, responsible, plausible outcome?

Questions and discussion points:

Climate change + sea level rise: Year 2100 – projected tidal inundation 0.8m, Year 2200 approx 2 – 4m?

Broader Tooradin area - Great Koo Wee Rup Swamp:

Reinstate? Reclaim? Repair? Regenerate? Rehabilitate?

Peat layer destroyed – was on fire for many years

Keep building levee banks higher?

Establish a hierarchy of priorities? Food production? Housing + businesses?

Status of fresh water aquifers? Deepest aquifers under the most pressure because recharged from far off hills

Kept apart from higher aquifers by layers of clay above

Fresh water is being taken out upstream

What is the salinity level in drains?

Traditional owners view: We need to understand what water is - water will claim itself back and release the its' energy

Apply 21st Century understanding of issues - international movement to remove dykes.

Example: “Room for the River” Netherlands [LINK](#)

Modern urban design to allows room for the extra water – local solutions

The sea will creep in; change/redirect the drains? Block them? What do we do with the levees?

Example: Lake Condah Swamp restoration project [LINK](#)

Complex landscape negotiation with the right to naturally, periodically swamp the land

Rutherford Creek reclamation project

Proposed Monomeith airport?

Fresh water and salt water interface

Sea levels rise and fall: dynamic system, huge tidal flows, takes a lot of physical space, seasonal flow from catchments

What is the desirable outcome 200 years from now?

What is a realistic, responsible, plausible outcome?

Questions and discussion points:

Tooradin Research, Environment, Community Centre

Develop a comprehensive map of Aboriginal archaeological and sacred areas

Researchers at the Centre can test little interventions

With enough vision there are local opportunities that can join up – regional and local

Experiments and prototypes of what we can do now

Melaleuca trees act as sponges: “We need to bring the Swamp back and people can live around it”

Country is most important

Defend the HPNL link

What should we do? What is the right thing to do?

Where should we defend first?

Food crops: how to defend?

Ground water pumping?

Existing levees retained?

Staged retreat?

Protect assets and allow flooding?

Smooth out levees and drains?

Next steps:

Self guided bike/car tour Bunyip to Tooradin Sunday March 28. 2021

Workshop #3: Monash Urban Lab/HPNL Design Workshop MADA Monday April 12 2021

1. Develop a sophisticated understanding of a dynamic system
2. Custodianship responsibility
3. Map farming/land types
4. Inventory of current projects along the HPNL Link
5. Projects that need to be done
6. Is there a way to restrict the developers?

Anthony Byrne MP



**WORLD
WILDLIFE DAY
3 MARCH**



Emma Humann
President of Environment Victoria

International Women's Day

If we want to talk about solving the climate crisis and restoring our environment, we also need to talk about gender equality.

The UN has found that women commonly face higher risks and greater burdens from the impacts of climate change and are unequal participants in planning and deciding the response. [LINK](#)

A recently released landmark report by the International Union for Conservation of Nature (IUCN) also found links between violence against women and climate change, including that attempts to address climate change are failing because of gender inequality. [LINK](#)

So we know that these two issues are actually closely related. But when an advocate for survivors of sexual assault can be named Australian of the Year in the same place where a culture of misogyny and abuse of power so clearly prevails, I find myself both hopeful and cynical about the pace of change for gender equality.

It's made me reflect on why I choose to celebrate International Women's Day, held today on 8 March. For me, it's because I want to be part of the change that leads to gender equality and because I am inspired by the stories and successes of other women driving this change.

At Environment Victoria, we have a proud history of women leading on behalf of the environment. Today we are an organisation where women continue to make their mark – our Board is 50 per cent women, our team is 64 per cent women, and our donor base is 60 percent women.

This isn't surprising – across the world, women are more likely than men to be concerned about the environment, consider climate change a serious problem, volunteer and give a higher percentage of their income to charities.

Women are a powerful force for social change and that is a continuing source of hope. Last week it was announced that two long-serving, passionate and dedicated women at Environment Victoria – Jane Stabb and Lena Herrera Piekarski – are moving on to a leadership position as Co-CEO of Climate for Change.

For me, this is a win for women and a win for the environment. I'm thrilled that society is embracing more women in power and creating workplaces that allow them to flourish, both professionally and personally. Congratulations Jane and Lena!

Clean Up



Sawtell's Inlet Tooradin 07/03/21



Pat Macwhirter, Marlene Hargreaves, David Forscutt





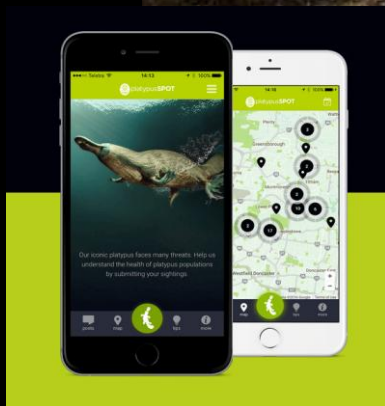
HPNL Committee meeting
09/03/21

platypusSPOT

Guest speaker: Teresa Mackintosh,
Waterwatch Coordinator with
Melbourne Water

platypusSPOT is a citizen science platform where the Australian community can assist the conservation and protection of platypuses and their natural habitat by recording their platypus sightings. This information helps researchers, such as the ecologists at **cesar**, understand more about the current status of platypus populations across their range.

Spotted a platypus recently? Report your sighting on platypusSPOT and become a contributor to the ongoing conservation and research of this iconic Australian species [LINK](#)



Credit: Melbourne Water
Photograph: Doug Gimesy

Western Port Catchment Landcare Network Strategic Planning Day 20/03/21



Top row from left: Geoff Lockwood (WPCLN), Jim Armstrong (WPCLN Committee & Labertouche Landcare), David Young (WPCLN Committee & Western Port Swamp Landcare), Phil Darton (WPCLN Committee & Neerim & District Landcare), Alan Forte (WPCLN Committee & Cannibal Creek Landcare).
Bottom row from left: Yasmin Kelsall (Confluence Ecology & Community), Bridgette Sullivan (WPCLN), Pat McWhirter (HPNL and Westernport Swamp Landcare), Sue Davies (and Westernport Swamp Landcare) and Marijke de Bever-Price (Landcare Victoria Committee & WPCLN President). Photographer - Nicole Walsh – Landcare Group Facilitator (WPCLN).

What should the role of a Network such as WPCLN be?

Themes discussed included:

- More engagement with traditional owners to incorporate Aboriginal knowledge about land management
- Humane treatment of animals
- Preservation of native plants/animals/threatened species
- Bringing the groups together for information exchange, co-ordination with other groups, as required, supporting local Landcare Networks to encourage, support and work with and within their local communities
- Co-ordination of larger projects across the catchment, develop Biolink plans, encourage farmers to add land to create nature links
- Education, information, support, source of grant funding, provide wider Landcare information and knowledge, distributing knowledge about local area
- Support local groups and communities by identifying funding opportunities, apply for and manage grants, having a facilitator who can help with grant applications and offer advice when needed
- Supporting member groups with technical advice and new ideas
- Administration support, provide group insurance coverage, reporting to PPWCMA or LVI
- To support staff and contractors engaged by the Network as they are the professionals
- To support property owners to protect, enhance and restore their land to maintain and increase biodiversity and to promote sustainable land management practices, promote innovation and that practices that improve the natural environment and agriculture, educating farmers in regeneration / healthy pastures and encouraging less use of synthetic chemicals
- To work with local government and landholders to improve community level involvement in the environment, liaise with local, state and federal governments, statutory authorities and agencies
- Collaboration with funding authorities for information and access, advocate to government and other organisations
- The Network should aim to be like Bass Network and employ more staff to organise grants and events
- Provide publicity and regular media articles for the Network



MONASH UNIVERSITY URBAN LAB

**OPEN HOUSE
MELBOURNE**

HPNL HEALESVILLE / PHILLIP ISLAND
NATURE LINK

**MEL
BOURNE
DESIGN
WEEK**

**REPORT FROM
WATERSCAPES OF SOUTH WESTERNPORT:
SELF GUIDED BIKE TOUR
SUNDAY, MARCH 28, 2021**

FROM BUNYIP RAILWAY STATION TO TOORADIN SPORTS CLUB



0 5 10 km



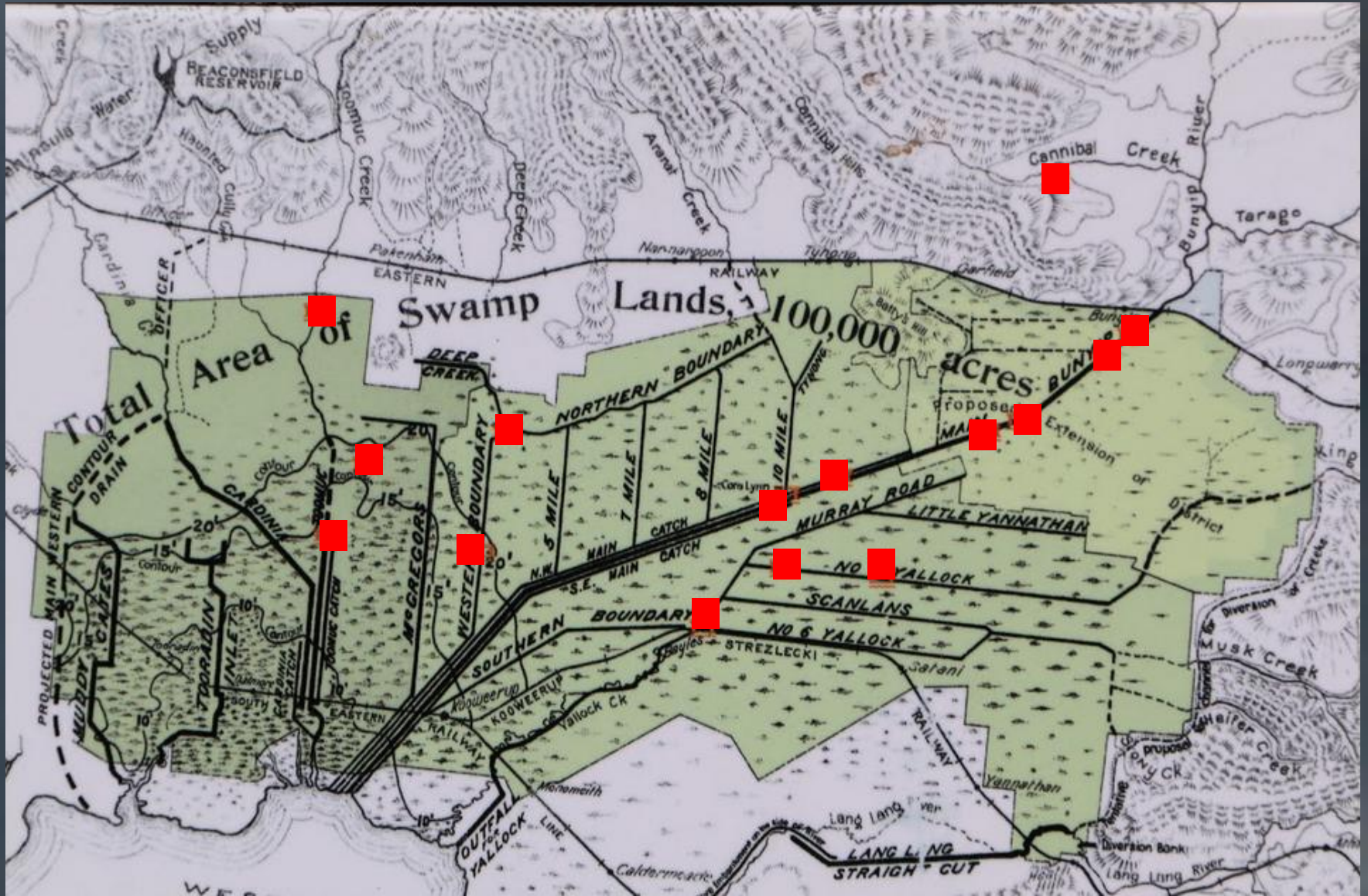
Credit: Cry of the Bunyips

Bunyip To Tooradin Bike Tour

We explored deep time ecology and delved into issues facing southern Westernport on a self-guided tour of the old swamplands of Koo Wee Rup and the coastal reserves of Tooradin.

The rapid pace of urban expansion and climate change pose a major threat to remnant vegetation and wildlife in the south Westernport landscape, which was once a buffer and sponge that protected the coastal edge of Westernport Bay.

Monash University Urban Lab is undertaking a multi-disciplinary design investigation in association with Healesville to Phillip Island Nature Link (HPNL), which focuses on water quality, habitat and ecology, and opportunities for restoration and recreation projects in this highly modified wetland complex. A tour primer was provided that included a selection of relevant visual and written material.



Locations of historic bridges within the 1920s' flood protection and drainage plan for Cardinia and Koo Wee Rup swamplands. Some of these bridges have now been replaced by modern structures. (State Library Victoria)



10am at Bunyip station. From left: Catherine Murphy Monash Urban Lab, David Mason: NMBW Architecture Studio, Gyöngyvér Engloner: REALMstudios (with intrepid baby, and husband), Prof Nigel Bertram Monash Urban Lab. Photo, Marlene Hargreaves



Bunyip River at Bunyip



Bunyip River at Iona



Credit: David Mason



Credit: David Mason



Credit: David Mason



Credit: David Mason





Credit: David Mason



Credit: David Mason



Credit: David Mason



Deep Creek



Toomuc Creek



Lower Gum Scrub Creek



Cardinia Creek

Manks Rd Dalmore



Bunyip River to Western Port at Koo Wee Rup



Bunyip River tributary to Western Port at Koo Wee Rup



Deep Creek to Western Port at Koo Wee Rup



Koo Wee Rup boat club Cardinia Creek to Western Port



Cardinia Creek to Western Port at Koo Wee Rup



Moody's inlet Koo Wee Rup



Lyall's inlet north side of Sth Gippsland Hwy Koo Wee Rup



Harewood Homestead at Lyall's inlet south side of Sth Gippsland Hwy Koo Wee Rup



Natural Swampland at Koo Wee Rup



Credit: Jim Worrell, Sawtell's inlet, Tooradin



Brian Hughes, HPNL Committee / Vantage Multimedia [LINK](#)
Natural swampland - Yannathan Reserve, Tooradin

Discussion panel held at Tooradin Sports Club from 2-3pm



Monash Team, HPNL Committee and guest panellists

Catherine Murphy: Monash Art, Design, Architecture | Urban Lab [LINK](#)

Prof Nigel Betram: Monash Art, Design, Architecture | Urban Lab [LINK](#)

Gyöngyvér Engloner: REALMstudios | Water, Architecture, Ethnography, Deep history [LINK](#)

David Mason: Graduate Architect | NMBW Architecture Studio [LINK](#)

Dr Pat Macwhirter: Bird Vet Melbourne | President, HPNL Committee [LINK](#)

Susan Davies: Farmer | Secretary, Western Port Swamp Landcare Group [LINK](#)

David Young: Farmer | Former Councillor Cardinia Shire | Westernport Biosphere [LINK](#)

Colin Butler: Former Mayor City of Casey | Senior Property Consultant, O'Brien Real Estate [LINK](#)

Amanda Stapledon: Former Mayor City of Casey | WFM Services [LINK](#)

Lindsay Mitchell: Tooradin Foreshore Committee of Management | Tidemaster Charters and Cruises [LINK](#)

Charles Kovess: Secretary Australian Industrial Hemp Alliance | Former CEO Koo Wee Rup Asparagus farm [LINK](#)

Marlene Hargreaves: EcoFuture | Marketing. HPNL Committee [LINK](#)

Past, Present and Future Waterscapes of Tooradin and Koo Wee Rup

This event was included in the **Melbourne Design Week Waterfront Program** and is part of a project that Monash Urban Lab (a research unit in the Department of Architecture at Monash Uni) is working on with the Healesville to Phillip Island Nature Link Committee.

The primary purpose of this project is to start to consider how to approach the future planning of the old swamp region that can improve its environmental conditions in light of factors like sea level rise and encroaching urban development.

Monash Lab researchers are architects and urban designers who spatialise problems and work with teams of people from different areas of expertise - in this case Indigenous, soil, ecology, aquatic engineering, landscape and history.

Working in this way, we develop feasible, design scenarios based on the specific conditions of a place that factor in a range of pressures that are being faced. We have a particular interest in understanding how underlying water systems can help inform the way we design and plan our places now and in the future.

We are very pleased to be working with Pat Macwhirter, Marlene Hargreaves, Mary Cole and others on this project. The conversation on Sunday will be moderated by Nigel Bertram from Monash.

The idea is to have a discussion that is quite conversational about what you, as local farmers and residents, experience in your daily lives living and working with water in the old Koo Wee Rup swampland and coastal town of Tooradin. Monash Urban Lab were aiming to get a sense of the richness of the area through the panel members' first hand stories.

The session ran for two hours and Nigel asked all panelists a series of questions to prompt their responses.





What is specific or unique to the area?

Sawtell's inlet has a 3m tidal variation – as compared to Port Phillip with only a 1m tidal variation. At low tide the Tooradin channel becomes a 'river' so there's not always access for vessels - so boaters must check the tides before planning their day. Aside from the abundant local bird life, from time to time in the inlet we are visited by sting rays, seals and dolphins.

When cruising onboard Tidemaster tourists can visit nearby North Western Port Nature Conservation Reserve, Western Port Coastal Reserve, Quail Island, Barrallier Island and French Island.

Wildlife habitats range from coastal mangroves, swamps, heath, grasslands and blue gum forests. Most koala populations on the mainland of Australia are affected by the chlamydia disease; however Quail and French Island populations are the world's densest and most disease-free population of koalas. Shelter is provided for more than 100 species of bush orchids, and 260 species of birds. Significant species on the French island include: king quail, the critically endangered orange-bellied parrot, fairy tern, white-bellied sea eagle, swamp skink, long-nosed potoroo. We can also see a small colony of penguins on Barrallier Island.

What is it like to live and work here with tidal environment of Tooradin on the edge of a Ramsar wetland?

We love living and working on the water. Tooradin is essentially a 'day' visitor centre, where most people leave around 5pm and we settle back in to being a coastal village. When we experience strong easterly winds or strong rain, the water becomes brown. The inlet, with the new jetty, is sheltered waters.

100 years ago Sawtell's inlet had sandy beaches on either side, but after the swamp was drained, mud and silt have collected in the inlet and with that the mangroves thrived.

Have you thought about the future and what kinds of changes, like sea level rise and the encroaching urban edge of Melbourne might impact on your life and work here?

As Casey is the fastest growing municipality in Victoria and with a 400% population growth in nearby Clyde, it is natural that Tooradin - as the only access to Western Port in Casey – will become busier as a tourism 'mecca' – and our business is an integral part of the Western Port tourism experience.

We are aware of rising sea levels in the future, but we are not concerned about it at present.



Susan Davies, Farmer / Secretary, Westernport Swamp Landcare Group

20 ha hobby farm in Monomeith Road, Bayles



What is specific or unique to the area?

- In the 1800s, the flat floodplains of the Westernport Basin, known as the Great Swamp, extended over 100,000 acres.
- There were dense stands of tea-trees, wattles, reeds, water, teeming with wildlife.
- The Bunurong people enjoyed seasonal hunting in the rich swampland around the bay.
- The Swamp consisted of Inner wet reedy & outer tea tree swamp surrounded by Grasslands and Wooded areas. Swamp Scrub, Swampy Riparian Woodland and Grassland.
- Pioneers around the Swamp were Jamieson and Rawson, Lyall, McMillan, McDonald, with 1868 Harewood homestead existing today.
- Land Act of 1874 - squatters to relinquish leases and land sold.
- Old Monomeith built 1859 - oldest house left derelict in paddock.
- The Government recommended that the Swamp be drained and cleared for settlement with works commencing in 1876. first with wheelbarrows, shovel, horse, then Lubecker Stean Dredge
- Great Southern Railway across the Swamp 1890s to 1980s
- 1892 Village Settlement Act.
- 1918 Soldier Settlement blocks - 20 acres.
- Times were tough with floods, fires, droughts, and economic depression.
- Meandering creeks were dredged into a grid work of drains around properties, along roads, including Bunyip, Cardinia, and Yallock running to Westernport.
- Much vegetation loss and modified waterways with many bridges and culverts across the flat landscape of farm paddocks.
- Rich peat soils from composted reeds and tea-trees grew potato then asparagus crops. Rich farmland for horticulture & livestock
- Koo Wee Rup to Bayles to Strzelecki rail 1922-1959 to cart dairy, sand & potatoes. Rural-urban interface lifestyle.
- Windmills pump groundwater from aquifers.
- Swamp lookout tower over Westernport
- Bandicoot Corner along with the Bayles Fauna Park, plus Yallock Creek form natural wildlife cluster at Bayles.
- Clematis and wattles adorn the roadside trees.
- Murray Road bridge on Yallock superb view to mountains

- Manks Road bridges over parallel sections of Cardinia, Deep, Toomuc, Gum Scrub Creek Drains - magnificent outlook.
- Many horse properties today, along with some run-down properties, abandoned houses and some highly productive farms.
- A lot of genuine old time farmers still around today.
- Today there is an intangible haunting beauty to the former swamp (only seen and felt by those who understand).
- Endangered Southern Brown Bandicoot and Growling Grass Frog live in pockets of our special area
- International Ramsar site around Western Port Bay listed in 1982 for shorebirds waders, saltmarsh, mangroves, mudflats.
- The 2% remnant vegetation is of significance, being fragments of the former Great Swamp.

What is it like to live and work here being a farmer on a previous swampland that is prone to regular flooding?

- Lovely rural/urban interface, close to facilities yet still a little bit country. Good neighbours.
- There have been several floods over the years including February 2011 flood when all the drains overflowed onto roads, paddocks, houses.
- Six inches rain fell but main flooding caused by 12 inches rain down from the hills along the Bunyip Main Drain. Since then
- Melbourne Water has improved drains and flooding is fairly controlled.
- The spoon drains on paddock dug 100 years ago still work well.

Are there new practices emerging to your work that recognise changes to water and other conditions will impact the productive capability of the land and sea?

- Place cattle on higher ground in times of flood to access grass.
- Take feed to cattle not cattle to feed to avoid pugging/bogging in wet times.
- Install more stock water troughs for stock for drought times
- Install several sources of stock water for drought times –
- such as dams, bore water, water leases.
- Fence off wetland areas and vegetate with native/indigenous plants for wildlife and provide stock shelter.
- Build several feet higher - contained in regulations.

Do you think this area should be protected from further development that the area could be regenerated so that certain areas might, for instance, allow the swamp to come back, while still sustaining local industries?

- Protection from development whilst still sustaining industries

- The essence of the former great swamp could be preserved along with moderate development of houses and infrastructure with considered advance planning.
- An extraordinary opportunity exists in Cardinia Shire for Melbourne Water to obtain land - maybe along a waterway, to create a Swamp themed parkland of 100 ha with wetlands, massed tea-trees, reeds, wattles, gums, grasslands, woodlands.
- This could become a reference centre showcasing cultural, heritage, environmental, wildlife of the swamp (as well as the Marine Centre at Tooradin).
- Seats, signage, pathways, huts, could be erected. It could promote the uniqueness of the swamp, and be a tourist centre.
- Ideas could be for MW to create easements of 20m either side of Yallock Creek for instance to preserve and regenerate remnants of swampy riparian woodlands.
- That all the HPNL waterway be given high environmental importance with steps taken to link adjoining properties through corridors.
- That State and Council create more nature parks for leisure and nature alike.
- That the peat land be protected forever.

Have you thought about the future and what kinds of changes, like sea level rise and the encroaching urban edge of Melbourne might impact on your life and work here?

- The proposed airport outlined in State Governments' Melbourne 2050 plan is still on the cards according to State Planning Officer.
- It will create a concrete jungle of development along the highways from Cranbourne to Korumburra, from Dandenong to Warragul.
- It would be great to protect and preserve the swamp's unique character, wildlife, farming, waterways and marine magic.
- Nature areas could be set aside to mitigate against the flood tide of overseas humanity coming through the airport.
- The only way the airport can be economical is to have the mass of tourists and newcomers, hence major development of the area in 30-100 years hence.
- If the area is saved, people can live side by side with intermingled development.
- The argument it hasn't happened at Avenel and won't happen here is nonsense, because Melb population is still relatively low, there are millions of people overseas wanting to gain better life in Aust and by 2060 say, immigration/travel very popular - facts of economics.
- Sea level rise - won't happen in our life, but we can build back from low areas and in meantime create wetlands/parklands in any suspect areas.....and/or regenerate the landscape.

David Young: Farmer | Former Councillor Cardinia Shire | Westernport Biosphere | Western Port Swamp Landcare

What is specific or unique to the area?

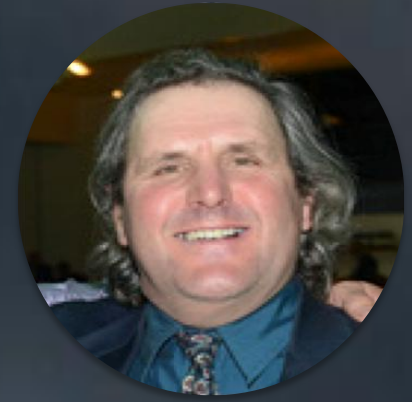
Family have farmed the Cardinia area for a number of years
2.5 – 3.5m above sea level on the northern edge of Dalmore – an undeclared flood basin

What is it like to live and work here being a farmer on a previous swampland that is prone to regular flooding?

- Flatness of the area and how we adapt or farm subject to constant flooding
- No protection from the levee banks
- Range from 3-4 floods per year to 20-30 floods per year
- During a big flood up to 80% of our farm can be under 6' of water
- Major flood can take up to 2 weeks to dissipate
- Our house is on a rise
- This results in pasture loss, pugging (animal hooves sinking in to earth creating holes)
- When it dries out the land surface is rough
- Water ponds then not useful
- Water in main drains drop before other drains run off
- The land can become anaerobic – air forced out of the ground
- Dalmore clay and peat
- When there are big rains in the hills, rain water can collect as high as the roof tops behind the railway embankment

Have you thought about the future and what kinds of changes, like sea level rise and the encroaching urban edge of Melbourne might impact on your life and work here?

- Pressure on land values not to graze.
- The biggest issue is 'land bankers' in the area – our property is 3km to a growth corridor on 2 sides.
- Last 2 years the land bankers years have been buying parcels of land to make it profitable to lobby for rezoning



Are there new practices emerging to your work that recognise changes to water and other conditions will impact the productive capability of the land and sea?

- Changing water flow impacts the area
- Long term strategic planning is needed – at least 100 years ahead – 10 years ahead is useless
- Pressure for more residential land in the area
- Double the value on our side of Melbourne than the other side
- Cora Lynn is the deepest part of the swamp, open water with reeds
- Not planted as densely with Melaleuca like Dalmore swamp

Any innovative land practices?

- Herd management – stand off areas
- Sacrifice paddock when wet
- Living with the inevitability of water



Dr Pat Macwhirter: Bird Vet Melbourne | President, HPNL Committee
Owner Harewood House, Koo Wee Rup

What is it like to live and work here with tidal environment of Tooradin on the edge of a Ramsar wetland?

Harewood House, where I live, was finished in 1868, on coastal high ground between Lyall's Inlet to the west and the Cardinia Creek Outfall, the confluence of four waterways that drained the Dalmore and part of the Koo Wee Rup Swamp.

It is 4 metre above sea level and has never flooded, although diary entries described it as being an island at times of heavy rainfall and high tides.

Looking at photographs dating from the 1870s you can see the change from being a place where 30-foot boats could come up a sandy Lyall's Inlet to deliver goods to a muddy, mangrove-choked waterway where kayaks can only be launched at high tide.

It is one of the few places in the world where shorebirds feed on vast mudflats and then congregate at high tide roosting sites when the tide moves in to cover their feeding grounds. Here they can be caught using canon netting. Over the past 40 years the Victorian Wader Study group has been instrumental, using leg bands, leg flags, geolocators and radio-tracking in unravelling the routes these birds take between Western Port and their nesting grounds in Siberia, Alaska, and elsewhere in northern Asia.

Have you thought about the future and what kinds of changes, like sea level rise and the encroaching urban edge of Melbourne might impact on your life and work here?

More for future generations, my own and other people's grandchildren and beyond, rather than what is likely to happen in my life-time. Having an historic house and site with both European and Indigenous heritage gives a longer time view about what has changed and why and whether this is the future we want to see created.

The urban growth corridor to the north and the prospect of an international airport to the east were instrumental in establishing the Healesville to Phillip Island Nature Link group.

HPNL wants to ensure that native wildlife habitats can maintain connectivity and survive the challenges of climate change, urban expansion and sea level rise.



Are there new practices emerging to your work that recognise changes to water and other conditions will impact the productive capability of the land and sea?

It is heartening that local, state and federal governments have recognised the challenges for wildlife and provided support and funding for land at Harewood to become an offset site for Growling Grass Frogs and Southern Brown Bandicoots, as well as five threatened ecological vegetation communities, Japanese Snipe and Swamp Skinks.

In this case it was to compensate for habitat damage from the Healesville-Koo Wee Rup Road. While this is an excellent move it is critical that this habitat remains connected with other suitable habitat for these threatened species.

The new draft Biolinks plan that has just been released by Cardinia Shire is ground breaking and a positive step in achieving the goal of protecting local wildlife and habitats in the face of urban development challenges.

Do you think this area should be protected from further development that the area could be regenerated so that certain areas might, for instance, allow the swamp to come back, while still sustaining local industries?

It is vital that this planning takes place at a landscape-wide level with a long-term view considering both flood mitigation and maintaining natural habitats rather than ignoring or fighting against natural processes.

Working with Monash Art Design and Architecture has been awesome, bringing to the table best-practice experiences from other parts of the world such as 'sponge cities' in China where assets are protected and have been for thousands of years, while the natural environment is allowed to function in terms of water flow and protecting natural habitats.

PS

*China: A sponge city is a **city that acts as a sponge** with an urban environment planned and constructed to soak up almost every raindrop and capture that water for reuse. Instead of funneling rainwater away, a sponge city retains it for use.*

*Netherlands: **Room for the River**; is a government design plan intended to address flood protection, master landscaping and the improvement of environmental conditions in the areas surrounding the Netherlands' rivers.*

Colin Butler: Former Mayor City of Casey | Senior Property Consultant, O'Brien Real Estate
120ha farm, long term local resident, President Cranbourne Shire Historical Society

What is specific or unique to the area?

To add to what has already been said by other panellists, Tooradin township is a unique enclave, with Western Port on one side and surrounded by a 'green wedge' belt.

Do you think this area should be protected from further development that the area could be regenerated so that certain areas might, for instance, allow the swamp to come back, while still sustaining local industries?

The township has almost reached its boundary limit and it's not envisaged there will be any further growth here.

Before all the horse trainers were in town but increasingly the big trainers are buying more horse properties as they move from the city to make way for residential land.



Credit: Jim Worrell

Rob Jones | Natural Resource Planner | Cardinia Shire Council

Zoom meeting Monday 29 March 1:00 – 3:00

Cardinia Shire Council are planning a 'biolink' wildlife corridor to save wildlife, connect pockets of native vegetation so wildlife can move more easily between areas, increase vegetation, improve waterways and help set environmental priorities for the next decade.

Cardinia Shire Council Mayor Councillor Brett Owen said the draft Biolink Plan shows where new wildlife corridors are needed across the shire. "The creation of new biolinks will enable us to connect the highly fragmented vegetation across the shire. This in turn will encourage the movement of wildlife, increase the genetic diversity in breeding populations, and ensure the long-term viability of our native animals."

Cr Owen said the plan will provide a long-term strategic direction for Council's environmental works over the next ten years. "Programs will be better focused to direct resources and investment on the most important conservation areas. We're asking people to have a look at the plan and consider how they can support native plants and animals on their properties. This could be through a variety of conservation management actions such as weed control, pest animal control, revegetation, and installing nest boxes or fencing to protect native vegetation."

Cardinia Shire is consulting with various environmental community groups including HPNL, CEC and WPCLN, SREA and friends group members. Community safety is paramount, and the Municipal Fire Management Planning Committee will be a collaborative partner in the design of all large scale biolinks.



Southern Brown Bandicoot



Growling Grass Frog



Black Swan

In an exciting development Council has developed a user friendly mapping web-portal where the community can provide feedback on maps which will very much suit the Biolink plan consultation.

The draft Biolink Plan consultation is open until Friday 30 April 2021. The draft plan uses the latest technology in wildlife species computer modeling and aerial vegetation mapping to identify key wildlife areas and potential 'biolinks' across Cardinia Shire.

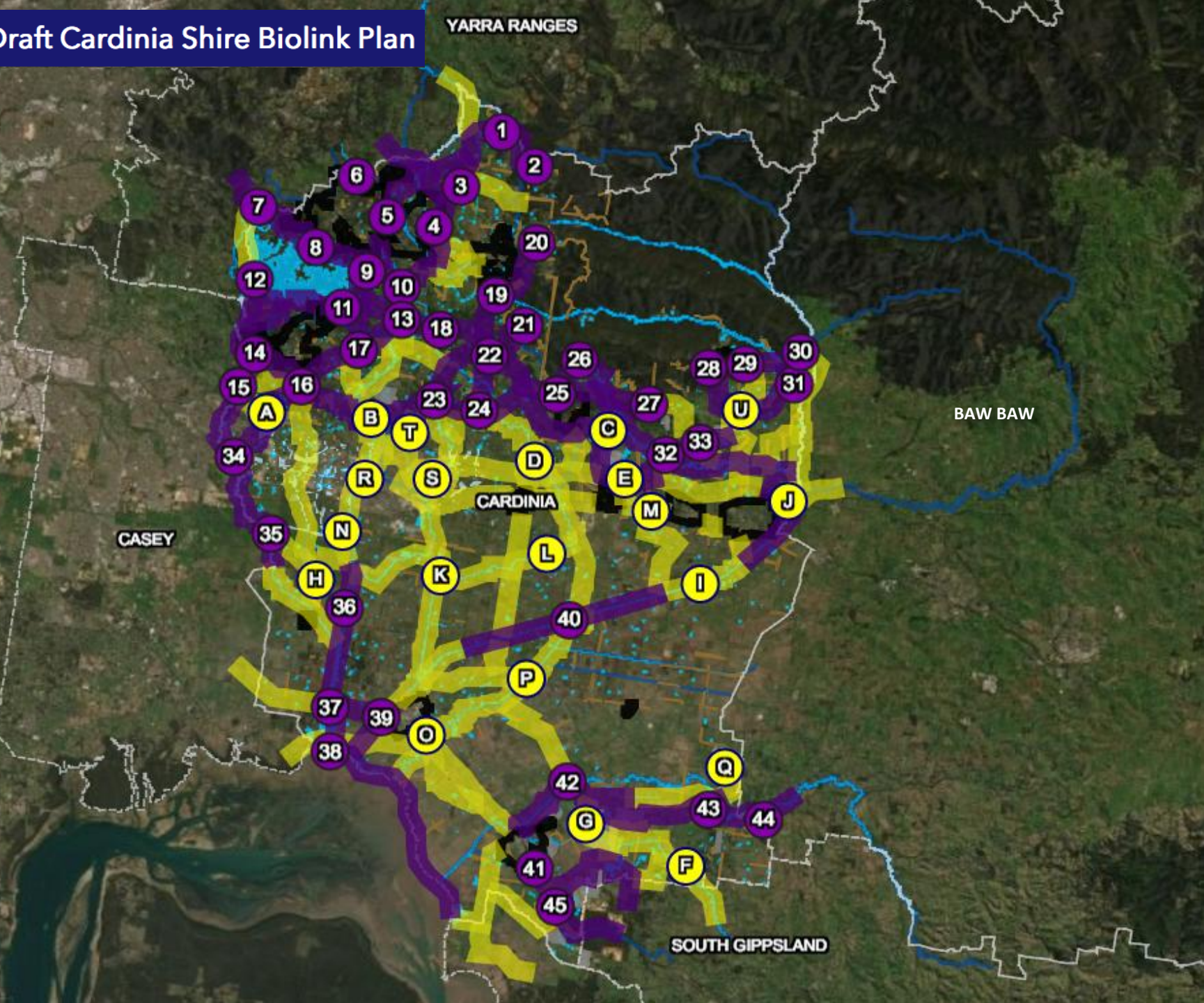
Community members will be able to provide high quality feedback via this mapping web-portal. The consultation asks residents how they can support native plant and animal habitats on their property. The consultation's key feature, an interactive map activity, asks residents to drop markers and make comments about how and where they can support wildlife corridors. They can also highlight areas on the map that they think have significant biodiversity value, or areas they think should be reprioritised.

An evening workshop will also be held in mid April for the broader community.

The draft Biolink Plan complements Council's other significant environmental work, including the *Sustainable Environment Policy 2018-28*, *Biodiversity Conservation Strategy* and *Weed Management Strategy*. View and interact with the community biolinks maps and have your say at this [LINK](#)



YARRA RANGES

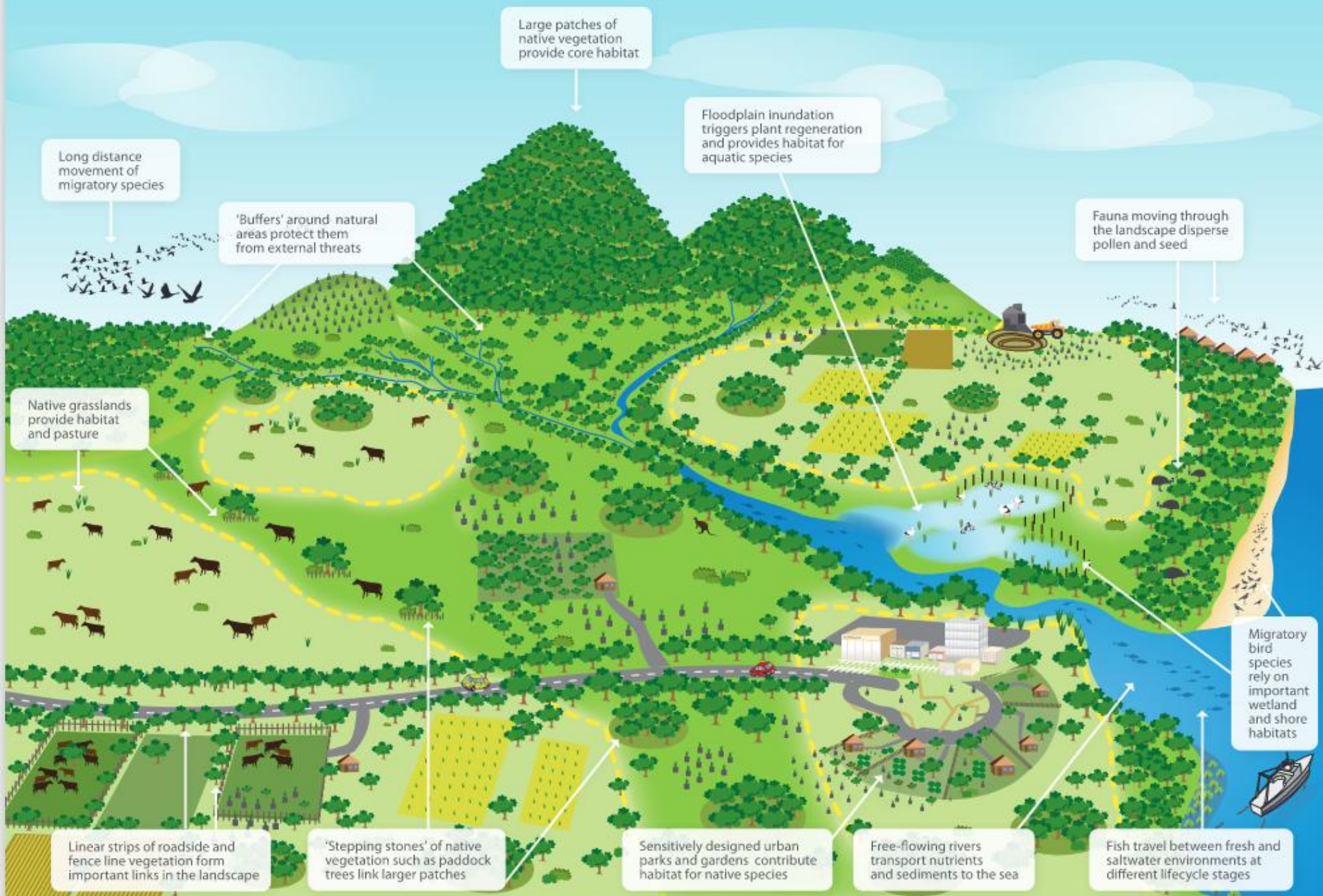


BAW BAW

CASEY

CARDINIA

SOUTH GIPPSLAND



WIN!

AGL's dirty gas import terminal **REJECTED**



Historic win! Community opposition to AGL's dirty gas plan 30/03/21

Community power has stopped AGL's damaging gas plan for Westernport Bay! Today, Victorian Planning Minister Richard Wynne rejected AGL's plans to build a giant gas import terminal in Westernport Bay. Together with Save Westernport, the Victorian National Parks Association, Environmental Justice Australia and others, we've shown that organised people can fight back against big energy companies and win.



For three years, we've demonstrated powerful community opposition to AGL's dirty gas plan – exposing the massive amounts of climate pollution the project would pump out, and the damage to plants, animals and habitats of Westernport's internationally recognised wetlands.

We broke records for the most submissions ever to an environmental assessment. Thousands of donors backed our work. And today we all won – Minister Wynne rejected AGL's Environment Effects Statement (EES).

This is only the second project to be rejected through an EES process in twenty years.

That shows you how bad AGL's plans were, but it is also a testament to the strength of our campaign.

Our strategy had three main parts:

- We worked with communities around Westernport Bay to demonstrate the scale and breadth of local opposition to this damaging project.
- We pushed for government policies to reduce gas demand (which we won in the 2020 state budget), and showed why the gas AGL wanted to import was not needed.
- We pushed for, and we got, the most rigorous environmental assessment possible.

16/04/21 Update:

The Environment Protection Authority have confirmed AGL have withdrawn their application to build the gas import terminal. View celebratory video at this [LINK](#)

Thanks again for everything you have done to support this campaign. Nick, Victor, Rai, Isabel, Alex and the team at Environment Victoria.

MONASH UNIVERSITY URBAN
LAB

HPNL HEALESVILLE / PHILLIP ISLAND
NATURE LINK

Workshop #3 Monday April 12 for proposed

TOORADIN

RESEARCH • ENVIRONMENT • COMMUNITY
CENTRE

Monash Urban Lab Workshop #3 Participants

Catherine Murphy: Monash Art, Design, Architecture | Urban Lab [LINK](#)

Prof Nigel Betram: Monash Art, Design, Architecture | Urban Lab [LINK](#)

N'arweet Dr Carolyn Briggs AM: Boon Wurrung senior elder, Chairperson Boon Wurrung Foundation [LINK](#)

Louise Wright: Architect | architecture that is connected to a local physical environment [LINK](#)

Rutger Pasman: CHORD studio | Monash Urban Lab [LINK](#)

Jon Shinkfield: REALMstudios | Urban design and landscape architecture [LINK](#)

Gyöngyvér Engloner: REALMstudios | Water, Architecture, Ethnography, Deep history [LINK](#)

David Mason: Graduate Architect | NMBW Architecture Studio [LINK](#)

Dr Jeff Yugovic (and wife Kathy): Botanist | Biosis Research [LINK](#)

Dr Peter Breen: CRC for Water Sensitive Cities/E2Designlab | Development of water sensitive cities [LINK](#)

Dr Pat Macwhirter: Bird Vet Melbourne | President, HPNL Committee [LINK](#)

Dr Mary Cole: Agpath Lab | Vice President, HPNL Committee [LINK](#)

Marlene Hargreaves: EcoFuture | Marketing, HPNL Committee [LINK](#)

Monash Urban Lab in partnership with HPNL Inc

Future scenarios for the ecological regeneration of the coastal inlet reserves of Tooradin, the Koo Wee Rup Swamp and the Cardinia Catchment

1. Strategies at different scales
2. Thoughts about implementation over time





- Blue: swamp land subject to inundation
 - Purple: wine growing
 - Green: current reserves
 - Pink: expanding population
- **Can see pink is starting to encroach on blue

Discussion points (not complete list):

- Need water projections to year 2100 – both sea and freshwater
- Tidal inundation ranges from 0.8m – 3.5m over time
- Dalmore swamp
- Koo Wee Rup swamp
- Regenerative agriculture inside greater regenerative park
- Series of existing overlays harking to protect soil biology, pasture cropping
- Swamp laboratory
- Experiment in techniques + human experience living and working on the swamp

Aboriginal perspective:

- See the country as a body
- Woolamai is the heart and lungs
- Last of fire sticks at Balnarring
- How to regenerate the knowledge and walking trails
- Yarra Valley water catchment – mountain to the bay – reclaiming the walks
- Instructive – educational – research – inform young people for the future
- Knowledge centre: building relationships
- First Nation ley lines

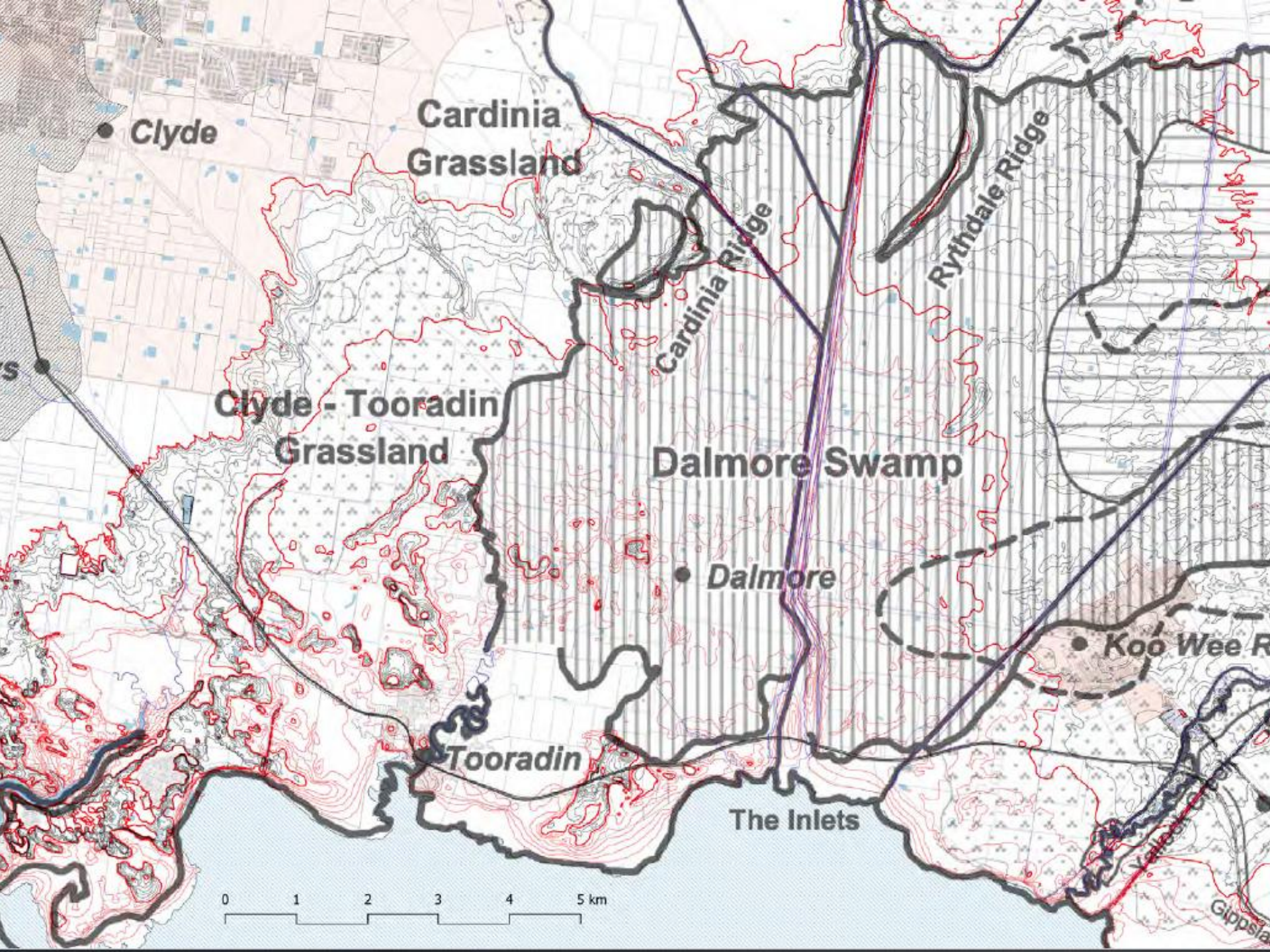
Tools:

- Wetlands form preferentially at low points – Cora Lynn
- Flood protections – manage water
- Levee's stop water getting in
- Little bit of strategic draining of the drains, cutting of trees
- Causeways for annual migration and waterways
- Zone has lakes and islands in it during water events
- Weirs
- Turkey Nest Dams – Gunn Rd and 11 Mile Drain
- Build above the plain

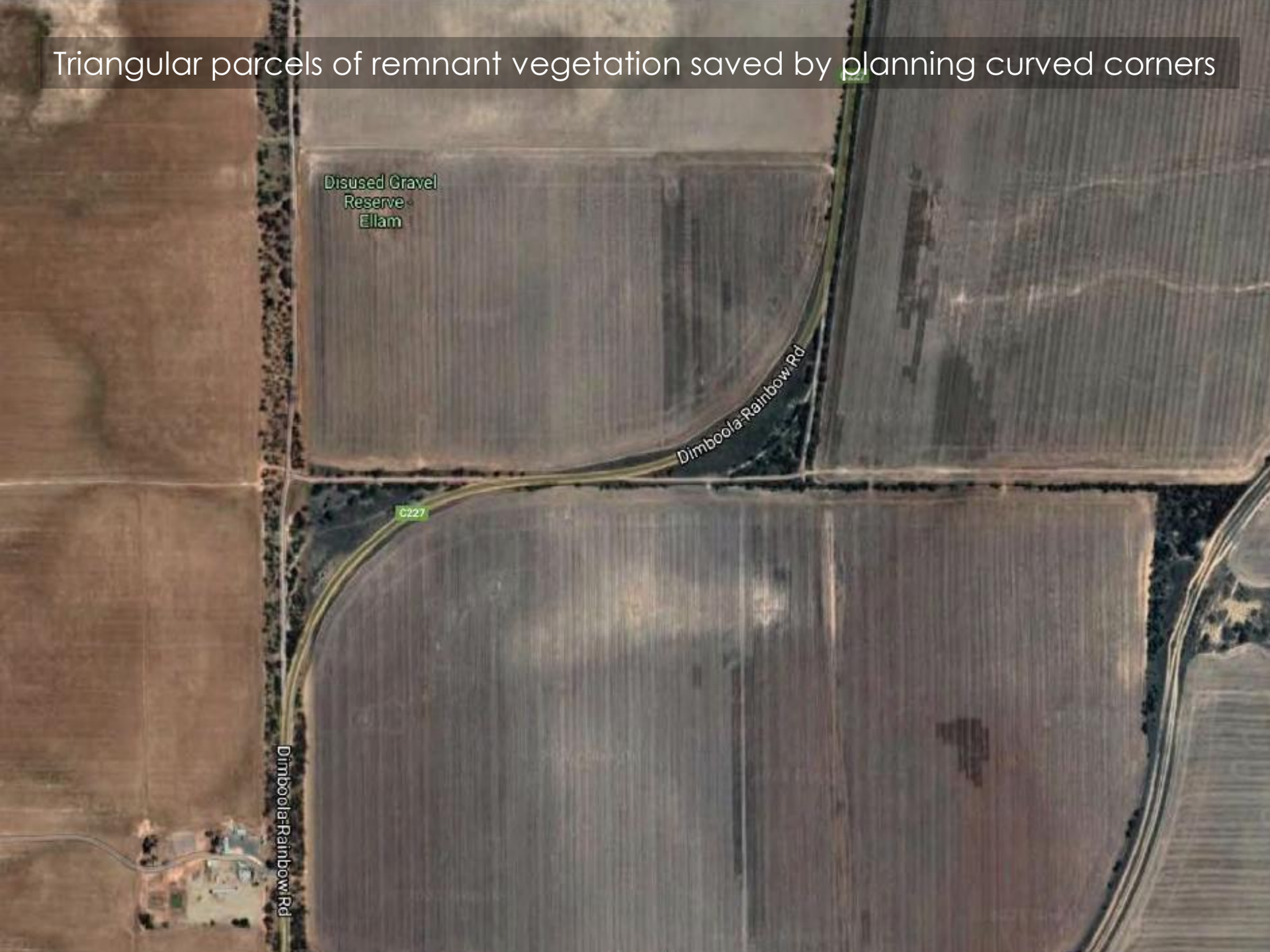


“Water is the super-connector”





Triangular parcels of remnant vegetation saved by planning curved corners



Turkey nest dam built above the plain



Lidar vision of the earth surface beneath the trees, grass, built environment



Actions: Greater swamp

Boon Wurrung Walks/tracks
Language Yaluk-Ut Baluk Wetlands people
Waang – Protector of the waterways
Seasonal walks
Understanding bird migration
Aerial scan/Lidar
Time line Park Map – 2100
Soil / farming change
Monomeith airport

Actions: Tooradin Centre

Building #1

- Aboriginal cultural space – co-custodianship
- Lockers
- Bike store
- Gumboots
- Data room
- Kitchen
- Dividable great room

- Artist in residence
- Office
- Outdoor classroom
- Indoor classroom

Building #2

Secure laboratory – plumbing, benches, microscopes, sinks
Next to jetty/access to inlet

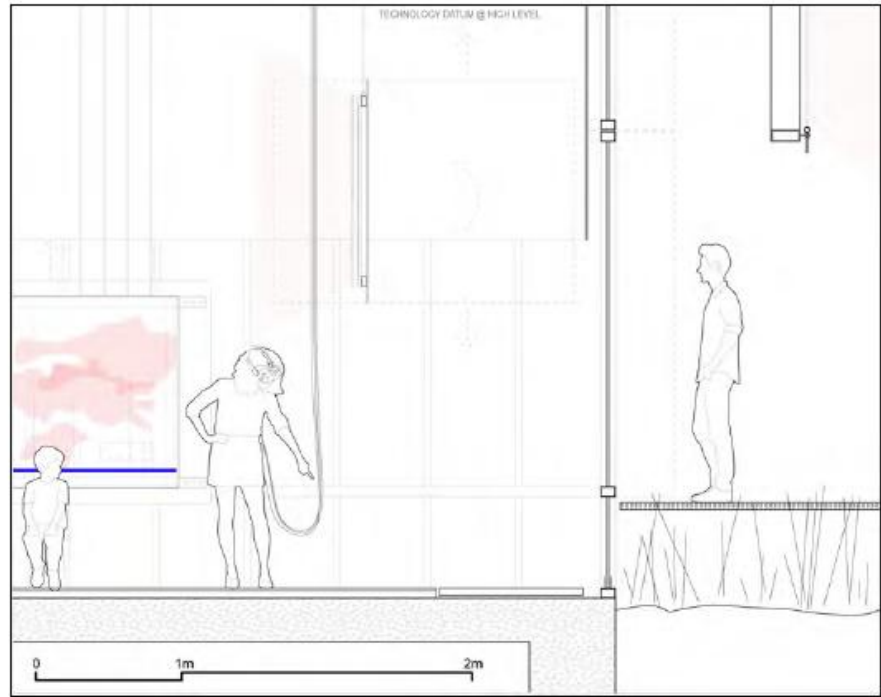
Regenerative knowledge centre
Centre name: Waang – protector of the waterways

- Visiting researchers
- Resource space
- Information board/external signage
- External exhibition
- Building is showcase – inside and out

Regenerative Park
Regenerative Agriculture
Regenerative Knowledge
Regenerative Urban

Technology Condition #2 (VR Terminals)

Ben Waters, architect



1. Detail Section within 'VR Terminal', Harry Butler Laboratory



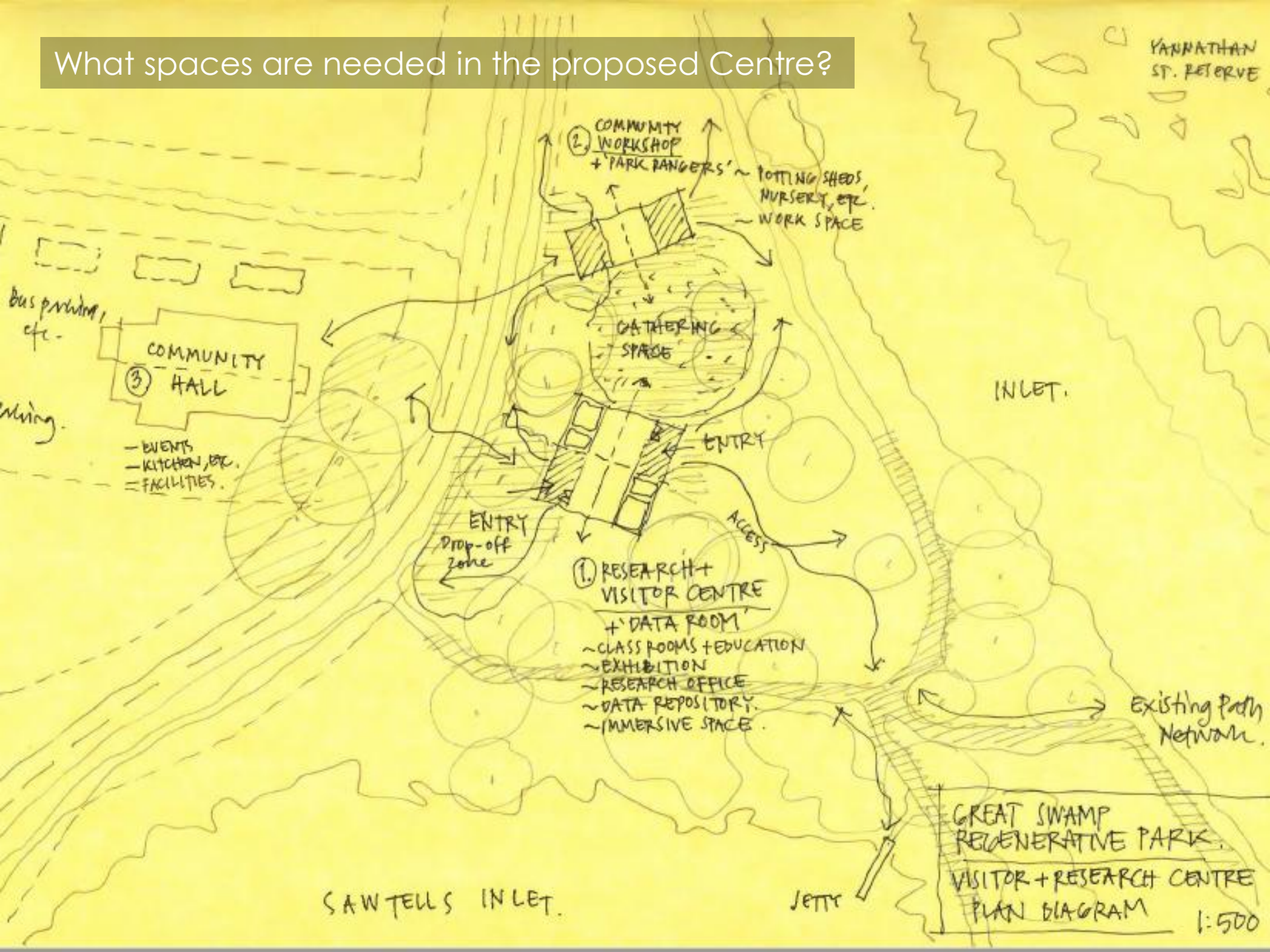
2. Perspective impression of 'VR Terminal', Harry Butler Laboratory

Interface Content

Ben Waters, architect



What spaces are needed in the proposed Centre?



Aerial view of the Tooradin peninsula north of the highway



An introduction to Boon Wurrung language from Aunty Fay Stewart-Muir

Aunty Fay Stewart-Muir is an Elder and Traditional Owner of Boon Wurrung Country. She is the senior linguist at the Victorian Aboriginal Corporation for Languages in Melbourne. Aunty Fay is working with her own Boon Wurrung language, recording and putting language into the database for future and present generations.

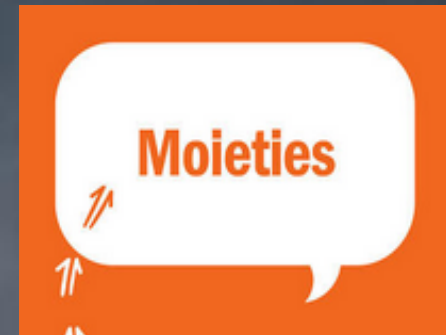
Aunty Fay Stewart-Muir shares ten words that were once spoken in the coastal region of Victoria stretching from Werribee River to Wilson's Promontory – two are listed below [LINK](#)

Moieties

We have two moieties in our traditional group.

There is **BUNJIL** - the eagle - creator of all that you can see on country – the hills and mountains, waterways, rivers creeks and billabongs, the trees that give shelter to various creatures and wood and bark for the houses or weelams of the Boon Wurrung peoples. He also was called upon to settle disputes between people.

The other moiety is **WAANG** the black crow. His is our protector of the waterways, rivers, creeks and billabongs. He makes sure the fresh water would run and be in plentiful supply for our people and the birds and animals



Agpath Lab: Agricultural Pathology and Biological Farming Service

Biological Farming 2-Day Workshop

Presenter: Dr Mary Cole

These interactive workshops help participants achieve a basic understanding of the complexity of soil biology, soil organic matter and the roles of bacteria and fungi in soil health.

Participants build a thermal aerobic composting ring that can be made on their own enterprise whether it is part of a hectare or many hectares. This compost is of the quality required for making compost tea.

Saturday: Biological Farming – making thermal aerobic compost and compost tea.

Sunday: Small Microscope Course – looking at biology in soil, compost, and learning how to recognise the various beneficial organisms.



As an alternative to adding fungal inhibiting chemicals, see why the use of organic additions to the soil can improve soil biology, promote nutrient availability and manage weedy species in the environment after drought or fire. Future proofing against climate change is an important discussion to be had on the day.

Concepts of regenerative agriculture will be discussed as will future proofing farms against climate change and the use of primary colonising weedy species as positive soil enhancers and nutritional food sources.

Individual problems are welcomed during the Q & A sessions. [LINK](#)

Agpath Lab: Agricultural Pathology and Biological Farming Service

Biological Farming 2-Day Workshop

Presenter: Dr Mary Cole

May

Saturday, 1: Biological Farming Workshop

Sunday, 2: Small Microscope Course

July

Saturday, 25: Biological Farming Workshop

Sunday, 26: Small Microscope Course

September

Saturday, 25: Biological Farming Workshop

Sunday, 26: Small Microscope Course

November

Saturday, 27: Biological Farming Workshop

Sunday, 28: Small Microscope Course

Saturday: Biological Farming

\$275

Sunday: Small Microscope Course

\$330

Saturday and Sunday (save \$55)

\$550

Lunch, morning & afternoon tea provided

Students currently studying can reduce the pricing by \$50 per day.

A letter from your institution will need to be provided.



Nixiwaka Yawanawa at TEDxHackney: We are all connected with nature [LINK](#)



Credit: Nature as a healer: Suicide Call Back

NEXT MEETING:

Date: Wednesday 28th April

Time: 7.30pm

Venue: Zoom open meeting [Link](#)

Speaker TBA

CONTACTS:

Dr Pat Macwhirter
President

E: patvet@bigpond.com

Gavin Brock
Secretary

E: gavin.brock@melbournewater.com.au