



**RHHFFPS**

# Wallumetta

Newsletter of the Ryde-Hunters Hill Flora and Fauna  
Preservation Society Inc.

Website: <http://rydehffps.org.au/>

Member of the Nature Conservation Council of NSW (NCC)  
and founding member of the Powerful Owl Coalition

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*We acknowledge the Wallumedegal, original inhabitants of the Ryde – Hunters Hill area.*

## PRESIDENT'S NOTE

Currently the NSW Parliament is conducting an inquiry into the planning system and the impacts of climate change on the environment and communities. Climate change will have a big impact on biodiversity and the Society has made a submission to the inquiry.

We submitted that a new instrument be introduced to the planning system that ensures areas are set aside that will support the biodiversity impacted by climate change.

For example salt marsh is a critically endangered ecological community that will be impacted by sea level rises caused by climate change. Current areas of salt marsh will be inundated by the rising water levels and lost unless there are areas where that ecological community can establish itself in the changed water levels critical for its survival

We have a particular interest in the Field of Mars Reserve where salt marsh is currently under threat from various factors including sea level rises. Appropriate intervention to preserve the salt marsh is a difficult proposition but it will be lost unless this ecological community can establish itself in new areas in the Reserve.

This is an example of what will occur on a larger scale unless areas are set aside for ecological communities to survive in the changed climate.

Not all critically endangered ecological communities are protected by relevant environmental zones and more generally biodiversity is subject to development pressure. Biodiversity will be lost unless provision is made on a state-wide basis for setting aside areas for biodiversity to establish itself following the rise in average temperatures.

This requires a new environmental instrument to zone appropriate areas for the future needs of biodiversity. The National Parks and Wildlife Act 1974 and the Environmental Planning and Assessment Act 1979 currently do not include relevant provisions. A relevant instrument may be a State Environmental Planning Policy (SEPP) that provides for C2 Environmental Conservation zoning for the areas identified and set aside for the future needs of biodiversity.

*Frank Breen, President*

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## PAST EVENTS:

### City of Ryde Spring Garden Competition Awards

No bushcare groups within the Field of Mars Reserve were entered in this year's competition, but we are pleased to congratulate several RHHFFPS members whose efforts were recognised:

- Native and Habitat Garden Winner - 1st Place: Fran Reddacliff
- Community Garden Winners - 1st Place: The Habitat
- Bushcare Regeneration Winners - 1st Place: Kitty's Creek; 2nd Place: Martin Reserve

At the awards presentation ceremony, long-standing Society member and environmental campaigner Jimmy Shaw also received recognition for his gardening. To view official details and photographs: see <https://www.ryde.nsw.gov.au/Events/Spring-Garden-Competition>

### Birdwalks

Our tireless expert Cathy Goswell led two more walks on 19 November. There was a wide range of ages among attendees, and all were appreciative. One had written and shared this poem:

#### ***The Butcherbird***

*You come with a flock of rainbow lorikeets  
their feathers bright blue, green, yellow and orange,  
shiny and soft  
like velvet and silk  
small red eyes and red beaks  
friendly and noisy  
they eat from my palm sunflower seeds*

*Your feathers are dark brown  
around your head a shawl  
your chest of beige  
you can't compete with those rainbow lorikeets  
butcherbird, you are so shy  
you won't eat from my hand  
you perch on the kitchen window and sing*

*you think you have found someone to love  
you have only seen your own reflection  
and sing your song of desire  
but on the other side of the window  
there is no one but me  
I hear your song in my heart*

*A sweet melody of longing  
sung but not for me  
your song is as beautiful as the blackbirds  
of my homeland  
you heal all homesickness  
I feel at peace.*

*- Emilija Debevec*



## COMING EVENTS:

### RHHFFPS Members' End-Of-Year Get-together – Sunday 3 December

We look forward to seeing you anytime on the afternoon of Sunday 3 December. Around 12.30pm we will serve a barbecue + salad lunch, and you will be able to help yourself to afternoon tea at any time. Enjoy the cool environment around the Visitor Centre, with lots of wildlife nearby!

### Boomerang Alliance - Total Environment Centre (TEC) Film Screening – Friday 8 December

Due for public release early next year, "Fighting For A Green Future" celebrates over 50 years of environmental action. Venue is Tom Mann Theatre, Chalmers St, Surry Hills – 6.00pm

The 7-part series, produced by TEC, answers critical questions:

- How did the Australian environmental movement begin?
- How have campaigns influenced society, economics, science, technology, law, media, and politics?
- What does the future hold for us, and is there hope?

You will hear from renowned campaigners, political figures, scientists, journalists and legal experts, including interviews with Tim Flannery, Bob Carr, Zali Steggall, and many more!

During the evening, TEC will also be hosting a Q&A panel with campaigners

[Places are limited; register here.](#)

## **Aliens Among Us: Invasive Species Council Webinar - Monday 11 December, 12-1pm**

Organised by the Invasive Species Council, this webinar will be held online on Zoom – click here to [register for the link to join](#) (plus calendar and email reminders). Special guest Dr Isa Menzies will help answer burning questions about the feral horse debate:

- How did they become bound up in the identity of a small but vocal minority?
- Why did the NSW government change laws to protect feral horses in a national park?
- Is there a connection between this and the voice referendum?
- What action is needed to save the 12 species threatened with extinction by feral horses?

## **City of Ryde Christmas Craft Walk - Saturday 16 December**

City of Ryde Council plans to hold this event in the Field of Mars Reserve. Without damaging live flora and fauna, you will collect natural materials and use them to make Christmas Craft items. Details, and how to register, will be posted on <https://www.ryde.nsw.gov.au/Events/Listing>.

## **NEWS FROM THE FIELD OF MARS**

### **Field of Mars Reserve Proposed Land Recategorisation Public Hearing and Submissions Report**

City of Ryde thanks those who participated in the public hearing on Wednesday 30 August 2023 and for the comments on the proposed land recategorisations of parts of Field of Mars Reserve. All submissions and feedback are incorporated into the Public Hearing and Submissions Report, made publicly available as required by Section 47G(3) of the *Local Government Act 1993*. A copy of the report is available via this link: <https://www.ryde.nsw.gov.au/files/assets/public/v/1/have-your-say/parks/field-of-mars/plans-amp-land-re-categorisation/field-of-mars-reserve-part-proposed-recategorisation-public-hearing-and-submissions-report-final-171023.pdf>

### **Accessible Tracks**

At a recent meeting with representatives of our Society and staff from the City of Ryde Council and Field of Mars Environmental Education Centre, plans were discussed to upgrade tracks in the Reserve. Some of these are:

- new accessible paths and picnic facilities near the Pittwater Road carpark
- raised approach to the bridge near the Visitor Centre so it is accessible at times of high water, and extension to the eastern end of the Visitor Centre veranda
- kerb strips along boardwalk, to prevent accidental falls over the edge
- a paved or crushed stone pathway to link the Westminster Road steps with the path from the boardwalk near the Environmental Education Centre
- extension of the Warada Track flat grass section to the Strangers Creek causeway.

There are also works planned to upgrade the bush tracks; in particular the uphill section of the Warada Track, and a link track from the Finch Avenue access to the Strangers Creek Track.

### **WILDLIFE**

Among the variety of birds which have nested and raised young this spring are these two Tawny Frogmouths who raised chicks among the mangroves and casuarinas near the Visitor Centre: (How many chicks can you see with the two parents?)

And more duck families appeared this season, with the survival rate of ducklings being almost 100%.





On 8 and 11 November a Royal Spoonbill was seen visiting Buffalo Creek... *photo by Pamela Ward*

And our resident brush turkey ("Roast") is rebuilding his mound in the memorial garden:



Also in November, several understory plants came into flower, including *Acacia parramattensis* (Parramatta wattle), *Elaeocarpus reticulatus* (blueberry ash), *Ozothamnus diosmifolius* (rice flower), and *Lambertia formosa* (mountain devil). There are some excellent photos of these on the Habitat Network Facebook page <https://www.facebook.com/HabitatNetwork/>

## BUSHCARE

With active members now recovering from their injuries and illnesses, all bushcare sites around the Reserve have been back in full swing. We have been doing water quality testing too, and the samples taken in the Reserve indicated that both Buffalo and Strangers Creeks are healthy.

**The Field of Mars Cemetery** was being maintained by managers of the Macquarie Park Cemetery, known as "Northern Cemeteries". Those of us who do bushcare at the top end of the Reserve were familiar with a team of workers starting at 7am each day and keeping the cemetery in good order. However, during 2023 this arrangement changed and cemeteries around Sydney are now being managed by Metropolitan Memorial Parks, formerly known as "One Crown Cemeteries".

Since that change there has been a drastic reduction in the maintenance of the cemetery grounds and an alarming number of weeds are now growing across the lawn areas and among tombs. Seeds from these are being spread by wind, rain and birds, and invading the top areas of the Field of Mars Reserve. Rubbish collection has also decreased so often, in addition to discarded plastic flowers, we find empty cement bags, plastic bags and other rubbish blowing or thrown into the Reserve. So we need to redouble our bushcare efforts in areas like Cemetery Creek 2.

## VISITOR CENTRE



*Among many contributions, John was a Bushcare Group member – 2014 photo by Sandra Payne.*

It's been business as usual for our volunteers. We enjoy the company of the local birdlife at those odd times when people are not around; however, on Sunday 19 November there were many extra people around as we were holding our bird walks, and there was a workshop at the Environmental Education Centre.

On Wednesday 22 November a few of us gathered to remember John Boyle, one year after his passing.

**JOIN OUR VISITOR CENTRE TEAM!** to keep the Visitor Centre open 9am-5pm on weekends and public holidays. Our roster of 4-hour shifts is negotiated according to members' availability. No specialised skills are required.

## BRUSH FARM PARK AND LAMBERT PARK MASTERPLAN

The City of Ryde Council is seeking input to create a Masterplan for Brush Farm Park and Lambert Park. They would like to hear what you currently like about these Parks, ideas and suggestions for how the Parks can be improved, managed, maintained and protected now and into the future.

Both parks are located in Eastwood. Natural features of these parks include established bushland, walking tracks and Archers Creek. Existing sport, recreation and community facilities include netball courts with lighting, neighbourhood playground, amenities building, community buildings, car park and a natural turf sportsground (*see artificial turf article below - editor*).

At <https://www.ryde.nsw.gov.au/HaveyourSay/Have-Your-Say/Brush-Farm-Park-and-Lambert-Park-Masterplan-Stage-1> you may either respond by submission or complete the online survey.

## NSW ENVIRONMENT PROTECTION AUTHORITY (EPA) - NEW DIRECTIONS

On Tuesday 24 October 2023, the Total Environment Centre and Boomerang Alliance held a Webinar with EPA CEO Tony Chappel, who has a background of being active in environmental issues. He was one of the main organisers of the deposit return system for recyclables in NSW. Information presented in the webinar was positive and gives us hope for a more proactive EPA. You may view a recording of the full webinar at <https://youtu.be/o-psL8opdBo>

## NEWS FROM THE NATURE CONSERVATION COUNCIL (NCC)

### 1. Forestry Corporation NSW is targeting forests with some of the highest known numbers of the endangered Southern Greater Glider.

Forestry Corporation undertakes surveys for *nocturnal* gliders during the day! This came to light after local citizen-scientists alerted the Environmental Protection Authority (EPA) to a possible breach. Forestry Corporation had found one glider den in a forest with the highest known glider population in NSW. Upon investigation, the EPA found 19 glider dens with 89 gliders.

Southern Greater Gliders are an endangered species so a 50-metre exclusion zone is legally required around all glider dens. The NCC team knew this wasn't a single occurrence, and decided it was important to identify locations across NSW where gliders are at risk. Results indicate Forestry Corporation is logging areas known to have some of the remaining populations of gliders in NSW.

[Interactive map is available here.](#)

***These forests are being destroyed – cut down and pulped for woodchips and cardboard – with no regard for the endangered wildlife that live within them.***

NCC alerted the EPA to a raft of potential breaches by Forestry Corporation, as well as to planned operations in some of the richest glider forests in NSW. After citizen scientists raised the alarm about logging destroying glider homes, NCC lodged a series of breach reports showing that logging threatens forests with the [largest known population of endangered southern greater gliders](#).

In great news, CEO of the Environment Protection Agency Tony Chappel responded by signalling a rule change for pre-logging surveys. The EPA finally realises that this loophole has allowed Forestry Corporation to flagrantly destroy habitat for endangered animals.

***Forestry Corporation disregards the wildlife whose homes they demolish, which is why it is critical that there are strong safeguards in place to protect threatened and endangered species.***

The NSW Government needs to recognise that **native forest logging is a dying industry** and plan for a transition.

The report, [Public native forest logging: a large and growing taxpayer burden](#) finds:

- Despite \$246.9 million in taxpayer subsidies, the native forest logging division of Forestry Corporation ran at a \$28 million loss
- Demand for timber from native forests is down
- Plantation timber can already provide the vast majority of substitute products
- Continuation of this industry exposes the taxpayer to an increasing level of financial risk.

**Our government is wasting millions of dollars** propping up this dying and destructive industry. Native wildlife is under threat from all angles and we can't afford to keep pouring money into the destruction of the Australian bush when there are other alternatives.

## **2. NSW Government will allow aerial shooting of feral horses in the Alpine National Park**

For over a decade, this additional control option has been tied up in politics rather than science. These introduced animals destroy the streams, wetlands and fields of the Australian Alps, compact soil, trample endangered animals, and overgraze the fields. The resulting damage to the alpine environment cannot be overstated. At least 25 threatened alpine flora and 14 threatened alpine fauna species, including the iconic corroboree frog, have been pushed to the brink of extinction.

This is a courageous move by the NSW government – in particular Environment Minister Penny Sharpe and Premier Chris Minns. It follows another recent success: the federal Senate inquiry established by independent ACT Senator David Pocock recommended immediate action on feral horses including aerial control. The decision throws a lifeline to the endangered species that call the Australian Alps home. Rangers can now get on with the task of removing feral horses from fragile alpine environments – before the mountains and rivers are trampled beyond repair.

No-one likes to see animals killed. Either we urgently reduce numbers of feral horses, or we accept destruction of sensitive alpine ecosystems and habitats and decline / extinction of native animals.

There is still work ahead. We must maintain the public support for effective control of feral horses that are destroying our alpine areas, and repeal the *Kosciuszko Wild Horse Heritage Act 2018*.

## **3. Habitat clearing - the elephant in the bush**

***50 million trees... An area four times the size of Newcastle... More emissions than Sydney... This is the devastating impact of habitat clearing across NSW every year...***

Habitat clearing for agricultural development is now the biggest cause of environmental loss in NSW - and it's ongoing. Since changes introduced in 2016, habitat clearing rates have tripled, with 100,000 hectares lost each year. Now, those who stand to profit 'self-assess' the ecological value of their land, and then approve its destruction. And developers are allowed to destroy areas of critical ecological importance if they promise to 'save' another in the future. ***Australia is the only developed nation named as a 'global deforestation hotspot'. NSW is the worst-ranked state in the country.***

One of the main barriers to reform is that most people, including members of parliament, simply don't realise that habitat clearing for agricultural development has become the biggest cause of environmental loss in NSW.

So NCC coordinated the Stand Up for Nature (SUFN) Alliance, a coalition of leading environmental organisations committed to a [Nature Positive NSW](#). In a 24-page document, this exciting vision presents a 10-point plan to shift from the destruction to the regeneration of nature across our state.



*Woodland cleared in northwest NSW - Image by Shirley Hall*

The SUFN Alliance will raise public awareness of the damage caused by habitat clearing, and how easily this can be stopped. They will brief Members of Parliament, talk to the media, and launch a dedicated online campaign.



## ENVIRONMENTAL RISKS OF SYNTHETIC TURF – ONGOING ISSUES

- précis of article by Anne Davies in *The Guardian*, 28 October 2023, on the latest concerns...



Federal legislation now effectively prohibits the export of plastic waste to overseas facilities. So when the Northern Beaches Council replaced old synthetic turf from an oval two years ago, rolls of old turf sat over a year until they were removed and are now in a container in a railway siding, awaiting completion of a plant capable of separating its components for recycling.

Photograph: Natural Turf Alliance

Challenges of what to do with worn-out artificial turf, combined with growing concern about microplastics and the likelihood of more extreme weather events, make for a complex debate about its use in Australia. The Alliance for Natural Turf – 16 community groups concerned about artificial turf – has asked the NSW government for a 5-year moratorium on rolling out the product. They advise precautionary principles, as little is known about long-term impacts of microplastics and chemicals they shed, – including forever chemicals perfluoroalkyl and polyfluoroalkyl (PFAS).

**The main concern is potential plastic pollution.** Most synthetic sports fields in NSW feature long synthetic blades supported by infill; the most commonly used infill is styrene butadiene rubber (SBR) crumbs from recycled tyres. The chief scientist says there is insufficient information and a lack of standards about the materials and chemical composition of the synthetic turf itself.

**“... a synthetic turf field without structures to reduce infill loss will wash tens to hundreds of kilograms of infill per year into stormwater systems or waterways,”** according to the report.

A big driver of increasing installation of artificial turf is population density and increased demands on sporting grounds. “All councils in Sydney face increasing demand for more sports fields to meet the needs of [a] growing participation in sport,” says Sue Heins, Northern Beaches mayor.

### Heat Island Effects

Unlike natural turf, artificial grass heats up quickly because it absorbs more solar radiation. “It’s a material that, like polished metal slides, can cause severe burn injuries,” says Sebastian Pfautsch, associate professor of urban management and planning at Western Sydney University.

His research has shown that synthetic turf in playgrounds can heat up to temperatures greater than 80°C, even when the ambient temperature is less than 30°C. Sometimes sprinklers are needed to cool the surface, which in part defeats the water savings associated with artificial turf.

### Recycling synthetic turf

Australian artificial grass manufacturer Tuff Turf has partnered with Sustainability Victoria to build a recycling plant at Barnawartha, near the Victoria-NSW border. Re4orm is due to open early next year. According to its director, Trent Cummings, **2 million square metres of artificial turf from Sydney playing fields will be replaced in the next six to eight years.**

The first stage is to separate the sand, crumb (usually rubber) and “gunk” from the plastic matting. The sand and rubber is then cleaned for reuse. The mat is then shaved of the grass blades so the plastic grass can be melted down into polyethylene pellets and stabiliser, which can be used in products such as boards for landscaping and seats.

The old artificial turf from the Northern Beaches will be one of the first artificial surfaces to be put through Re4orm’s process. But in the meantime, councils are likely to face increasing questions from their communities about the environmental safety of the product.

## **NEW RECYCLING TECHNOLOGY DECONSTRUCTS MIXED PLASTICS**

*- from an article by Ellen Phiddian, published by Cosmos, September 2023*

A team of US chemists found a way to convert unrecyclable mixed plastics into useful chemicals.

Mixed materials usually end up in landfill because they are very difficult to recycle. A shirt made from 40% polyester and 60% cotton, for instance, has plastic and cotton fibres wound very tightly together. The fibres must be laboriously unwound, or taken through a number of energy-intensive chemical reactions before the plastic and cotton can be separated and used again.

But now the researchers have developed a catalyst that can efficiently disassemble the polymers, but leave other things in the mixture intact. It leaves behind a soup of carbon-based chemicals which can then be turned back into plastic, or into other materials.

The research is [published](#) in *Materials Horizons*.

## **NEWS FROM LOCK THE GATE – COAL MINES PROSECUTED**

A Lock the Gate complaint triggered a successful prosecution of Whitehaven Coal for unlawful water take at its Maules Creek coal mine in 2021. Now, two more long-standing complaints of unlawful water taking by coal mines in NSW have resulted in major sanctions being imposed.

These are the Boggabri coal mine near Narrabri, and the Dendrobium coal mine in the Sydney drinking water catchment area. After three years of taking large volumes of water without proper licences, both mines have been forced to enter into “Enforceable Undertakings” with the regulator for these breaches, and the owner of the Dendrobium coal mine will have to pay the biggest contribution ever made under such an undertaking in NSW: \$2.9 million.

The Boggabri coal mine, like the neighbouring Maules Creek mine, was taking this water during the height of the worst drought on record in the Namoi Valley. Farmers were destocking, the river ran dry, and the Boggabri mine diverted water straight into the mine site so it did not go to the river.

Dendrobium is an underground mine, but the longwalls below ground damage the overlying rock layers and cause subsidence all the way to the surface. Swamps collapse, creek beds crack, and water that should be feeding dams for Sydney and the Illawarra runs into the coal mine instead.

## **SOLAR CITIZENS CAMPAIGN TO SUPPORT BATTERY POWER**

A federal government decision to support the roll-out of household batteries is currently under consideration. The Australian Government is currently deciding whether to introduce a new subsidy or rebate to support household batteries. Solar Citizens will hand over a [household storage petition](#) to the Minister for Energy and Climate Change Chris Bowen.

Household battery storage supports rooftop solar by soaking up excess energy produced during the day for use at night. Increased battery storage is critical to building an energy system that can handle the AEMO’s target of doubling the amount of rooftop solar over the next ten years. If the Australian Government wants to achieve enough behind-the-meter battery storage to meet the AEMO’s rooftop solar targets, support is required in the short term to unlock household investment in this key energy infrastructure.

## **AUSTRALIA IS ONE OF THE FIRST COUNTRIES TO SIGN THE HIGH SEAS TREATY**

*- news from Save Our Marine Life*

The high seas are the international waters lying beyond the boundaries of any country. They make up roughly two-thirds of our planet’s oceans, but only about one percent is currently protected.

Once 60 countries have ratified the treaty it will come into force, allowing for the creation of international marine parks on the world’s high seas. Signing the treaty is the first crucial step.



## RENEWABLES SURVEY BY FARMERS FOR CLIMATE ACTION

Last month farmers and those working in the ag industry were asked to share their insights into renewables on farm - from generation to storage to transmission lines and the electrification of on farm operations - we went deep into the barriers and opportunities, challenges and solutions.

Over 300 farmers [provided their insights](#) through a 30-minute survey, the results of which Natalie Collard, Farmers for climate action CEO, is sharing in person with relevant federal politicians.

Key highlights in the findings are:

- 92% of farmers who responded support Australia's acceleration to more renewable energy in our national grid
- More than 95% are open to generating or hosting renewable energy projects on their property, or want to do more if they're already doing so
- 64% believe their communities are opposed to transmission projects in their region - with 44% thinking more extensive and genuine consultation would lead to better community support.

[These insights](#) have directly informed our submissions into a number of key government reviews and inquiries in the past month:

- Our response to the Australian Energy Market Commission's draft rule change for transmission companies
- Our submission to the Australian Energy Infrastructure Commissioner's review into community engagement practices, and
- The Senate inquiry into residential electrification

They also provide with a raft of policy recommendations to continue to use in advocacy on behalf of farmers, detailed on the final two pages of the report.

***The goal is to protect the future of farms and food security.*** So, they strongly support the deployment of renewable energy to achieve this decade's emissions targets. Clean energy rollout should respect farmers and regional communities, to limit climate change impacts.

## MURRAY-DARLING BASIN AGREEMENT: A WIN FOR RIVER COMMUNITIES AND ENVIRONMENT.

With the Senate debating changes to Australia's most important water laws, changes may rescue the \$13 billion Murray-Darling Basin Plan to improve the health of our largest river system.

The [Water Amendment \(Restoring Our Rivers\) Bill 2023](#) is a crucial step forward. It proposes to lift the Coalition-era cap on water buybacks, allowing the federal government to recover more water for the environment through the voluntary purchase of water entitlements from irrigators.

In an agreement between The Greens and the Albanese Government, the bill will see more water returned to rivers, greater transparency measures to stop water theft, and recognition and funding for First Nations communities. Specifically, the agreement provides:

- More water for the environment
  - 450GL more water for the environment guaranteed in law, including rule changes to stop over-extraction in the Northern Basin
  - Agreement that climate change will be considered in the Basin Plan review
- Stronger laws to stop water rorts, including an Independent Water Audit
- Recognition of First Nations communities in the Murray-Darling Basin Plan, as well as \$100 million for First Nations cultural flows

Drought and climate change continue to threaten ecosystems, but this agreement is a significant breakthrough and a critical lifeline for the environment and communities.

## **“BIOLOGICAL ANNIHILATION” EXTINCTIONS CHANGE THE TRAJECTORY OF EVOLUTION**

- article by Matthew Ward Agius, published by Cosmos in September 2023.

Scientists believe entire genera – the evolutionary classification that groups separate but genetically distinct species – are disappearing as other organisms buckle under pressure from human activity across the planet.

In research [published](#) in the *Proceedings of the National Academy of Sciences*, ecologists Professor Gerardo Ceballos and Paul Ehrlich suggest vertebrates – backboned animals – are not merely disappearing at the species level, but also at higher taxonomical groupings of species.

It points to the thylacine (*Thylacinus cynocephalus*), baiji (*Lipotes vexillifer*, the Yangtze River dolphin) and passenger pigeon as recent examples of species that have been declared extinct, representing both the demise of the species and genera.

They calculated the background extinction rate – the pace with which a species could be expected to go extinct without human influence – at about 1 vertebrate genera every 250 years, based on there being 5,418 currently described groupings at this taxonomic level.

But they found the actual rate is much higher – in the past 500 years, 72 vertebrate genera have disappeared. In effect, a genus disappears every 7 years.

They describe this process as a “mutilation of the tree of life” – with individual branches essentially pruned by human pressure. While non-vertebrate species like insects, molluscs, fungi and plants are not included in their study, other research suggests similar rates of decline are being experienced by these groups.

“As scientists, we have to be careful not to be alarmist,” Ceballos says

“[But] we would be unethical not to explain the magnitude of the problem, since we and other scientists are alarmed.”

### ***Sixth mass extinction underway***

Evolutionary scientists warn that the world is likely experiencing a new “mass extinction event.”

Such events – this is believed to be the sixth – see species disappear over massive timescales.

The risk for ecological systems is the collapse of important functions provided by key organisms and organism families.

In their study, Ceballos and Ehrlich warn of biosphere-wide transformations through taxonomic losses that could make it “impossible for ... civilisation to persist.

“In the long term, we’re putting a big dent in the evolution of life on the planet,” Ceballos says. “But also, in this century, what we’re doing to the Tree of Life will cause a lot of suffering for humanity.”

The loss of taxa leaving holes in what they describe as the tree of life’s ‘canopy’ will not be readily replaced, though similar vertebrates could temporarily occupy the void left by a missing group.

They point to the unusual gastric-brooding frogs (*Rheobatrachus*) of Queensland, which swallow their eggs (rather than releasing them into their environment) and develop tadpoles inside their stomachs – effectively converting them into uteruses – as a lost opportunity for human study.

Similarly, the demise of once-widespread passenger pigeons limits diets in northeastern North America for predators, and allows rodent species they competed with for food to flourish. The knock-on for humans is less food to eat and more disease borne by rodents.

Bradshaw describes the current ecological situation as a “perfect storm”, and warns the limited research on non-vertebrate extinctions is a cause for concern.

“Systems are already highly compromised through habitat conversion, pollution, invasive species and all the other things we’ve done, so you add climate change into the mix and you get this catastrophic drop in the Earth’s carrying capacity for every species,” Bradshaw says.

“And as you get natural systems collapsing around us, our demise will be guaranteed as a result.

“It’s quite a concern, we’ve taken out all of the elasticity left in the system and we’re continuing to push it... the ‘balloon’ is bursting.”

## THE WORLD FACES SIX TIPPING POINTS

- *précis of article by Imma Perfetto published by Cosmos in October 2023.*

A new United Nations University report warns that the world is on course to cross 6 tipping points, beyond which our global systems will fundamentally change.

The [\*Interconnected Disaster Risks Report 2023\*](#) by the UN University Institute for Environment and Human Security (UNU-EHS) has identified the 6 risk tipping points:

- Accelerating extinctions - rate of species extinction is [10 to 100 times Earth’s natural rate](#)
- Groundwater depletion
- Mountain glaciers melting
- Space debris
- Unbearable heat
- Uninsurable future

“As we approach these tipping points, we will already begin to experience the impacts. Once crossed, it will be difficult to go back,” warns Dr Jack O’Connor, co-lead author and Senior Expert at UNU-EHS, in Germany. “Our report can help us see risks ahead of us, the causes and the urgent changes required to avoid them.”

### ***What are risk tipping points?***

The report defines a risk tipping point as: “the moment at which a given socioecological system is no longer able to buffer risks and provide its expected functions, after which the risk of catastrophic impacts to these systems increases substantially.” The risk tipping points share similar root causes and drivers that put pressure on our systems – for example **ecosystems, water** and **transport** – until they are pushed to the brink of collapse. Reaching these points means new risks will be introduced, and the ways that we currently manage a risk may no longer apply.

### ***How do we avoid these tipping points?***

**Solutions:** The report proposes two categories for solutions, **AVOID** and **ADAPT**.

**Actions:** The two kinds of actions that can be taken are **DELAY** (work within the existing system) and **TRANSFORM** (ideal: fundamentally change the system to be strong and more sustainable).

These changes include:

- a shift towards zero waste
- a closer connection to nature
- global cooperation and trust
- consideration for future generations, and
- shifting to an economic model that is less focused on growth and more on human well-being within planetary boundaries.

## MEMBERSHIP RENEWALS ARE DUE AT THE END OF THE YEAR!

Payments and donations from members account for around 40% of our total income, half of which is used to pay for our own operating expenses and insurance. Remaining funds are used for our Society's membership and support for other environmental organisations.

**We invite you to renew your membership** and consider making a donation towards your Society's activities for 2024. All members enjoy active involvement in our Society's activities to support the protection of natural environments both locally and beyond, receive this "Wallumetta" newsletter and are emailed early notifications of our special events.

**The form below has details of fees payable and payment methods.**

### NEW MEMBERS WELCOME!

Please pay by direct transfer to our Bendigo Bank account: RYDE HUNTERS HILL FLORA AND FAUNA PRESERVATION SOCIETY INC, BSB 633-000, Account number 190716589.

Include your name in the transaction description; and email your name, address and phone number to [rhffps@gmail.com](mailto:rhffps@gmail.com)

Or you may pay by cash: Complete and hand in this form with payment in a sealed envelope at the Field of Mars Visitor Centre, or post to: RHHFFPS, PO Box 552, Gladesville 1675.

NAME:

Address:

Phone:

Annual Membership (add \$10 for newsletter to be sent via Australia Post):

\$

Individual \$ 15 (+ \$ 10 )

Family \$ 35 (+ \$ 10 )

Concession \$ 10 (+ \$ 10 )

(Students/Pensioners) Donation

**Total Payment:**

**Email address - please print clearly:**

## WIN A NEW YARNKNIT\* RUG

**IN WARM NATURAL COLOURS!**

**Tickets \$2 each / 3 for \$5 – at the Visitor Centre...**

or pay to Bendigo Bank account:

RYDE HUNTERS HILL FLORA AND FAUNA PRESERVATION SOCIETY, BSB 633-000, Account number 190716589.

Put "Raffle" + your name and phone number in the comment, and we will then organise the tickets for you.

The winning ticket will be drawn at our Society's next Annual General Meeting.

Proceeds support the work of our Society.



\* Hand knitted and kindly donated by members of the Holy Spirit Yarnknit Group.