WALPOLE WILDERNESS

BIOBLITZ

2022

Discover the Diversity

REPORT

iNaturalist

Department of Biodiversity, Conservation and Attractions

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Department of Local Government, Sport and Cultural Industries

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Association Inc.
P.O. Box 8
Walpole WA 6398
walpolewildernessbioblitz@gmail.com
www.walpolewilderness.org/Instagram

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Author:
Melissa Howe
Contributors:
Katrina Syme
Em Lamond
Editorial Team:
David Edmonds
Elizabeth Edmonds
Main Cover:
Tingle leaves
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ACKNOWLEDGEMENT OF COUNTRY

We would like to acknowledge the Noongar/ Nyungar traditional custodians of the land on which the Walpole Wilderness BioBlitz 2022 was held. We wish to acknowledge and pay respect to their ancestors and for the continuing culture and care of this land.

The Walpole Wilderness Bioblitz 2022 was held in the ancient red tingle forest within the Walpole Wilderness Area. These forests are only found within a 20km radius of the town of Walpole and contain some of the largest trees in the world and many species found nowhere else on Earth.

“The dtingle trees hold great spiritual significance for my people. These living beings – dtingle trees – hold the spirits of our Pibulmun Ancestors”.

Dr Wayne ‘wonitji’ Webb,
Pibulmun-Wadandi Traditional Elder

1 ACKNOWLEDGEMENTS

Funding support

We are very grateful for the generous funding support provided by Walpole Nornalup National Park Association (WNNPA), South West Catchments Council, South Coast Natural Resource Management, WA Parks Foundation and Walpole Op Shop to undertake the Walpole Wilderness BioBlitz 2022.

Organisers, Team leaders, Tail-end Charlies & Specialists

Thank you to the volunteers and specialists that dedicated their time, energy and expertise as team leaders, assistant leaders, tail-end Charlies (bringing up the rear to accompany the slower and more distractable participants) and specialists that assisted with species identification and provided identification resources and survey and monitoring equipment. Special thanks to the caterers for providing an amazing dinner.

Walpole Wilderness BioBlitz Participants

Many thanks to all participants who were involved in the Walpole Wilderness BioBlitz 2022 whether it was in person or your assistance with organisation, reconnaissance, identification or evaluation. Your contribution was greatly appreciated.

Speakers

Tim Andrews
WNNPA President

Dr David Edmonds
Emcee & WWBB Project Coordinator 2021 & 2022 & WNNPA committee member

Melissa Howe
Ecologist & author of the WWBB report 2021 & 2022

Keith Bradby OAM
Chief Executive Officer, Gondwana Link Ltd

Dr Sapphire McMullan-Fisher
Mycologist

Participating Organisations

- Walpole-Nornalup National Park Association (WNNPA)
- WA Museum
- Birdlife Western Australia
- Biologic Environmental Survey
- Department of Biodiversity, Conservation and Attractions (DBCA)

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WALPOLE WILDERNESS BIOBLITZ 2022

The Walpole Wilderness BIOBlitz (WWBB) is a citizen science project where volunteers from across the community join with local enthusiasts, amateur experts and scientists to survey the species found in an area over a short period of time. The information gathered provides a snapshot in time of the biodiversity of the area and can be used to help improve our understanding and long term management. The second WWBB took place over the weekend of 1 + 2 October, 2022 celebrating the following outcomes (executive data summary updated as of June 2023):

1262 Volunteers hours

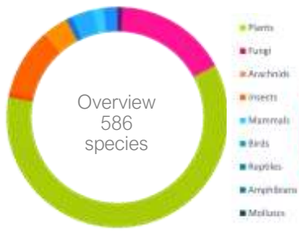
259 Identifiers/Participants

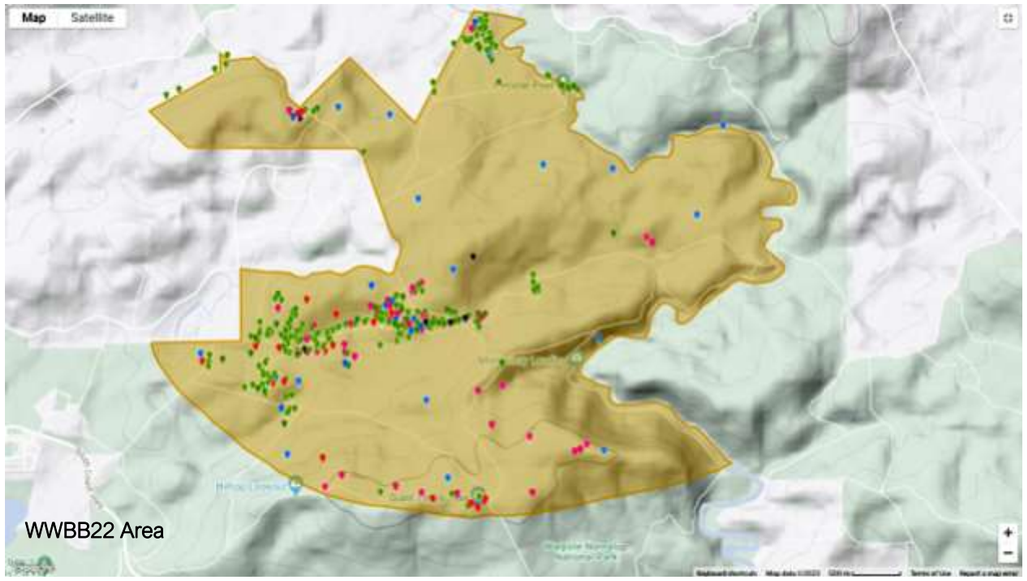
3,098 Observations

586 Species identified to genus level

$111,000 Project value

2 Days
46 Surveys
7 Habitats
11 Significant species
26 Undescribed species





WWBB22 Area


© D Edmonds

3 WALPOLE WILDERNESS BIOBLITZ 2022

Over the weekend of Saturday 1st to Sunday 2nd October 2022, over 160 participants gathered to be involved in the Walpole Wilderness BioBlitz (WWBB22) coordinated by volunteers from the Walpole-Nornalup National Park Association (WNNPA).

The Walpole Wilderness BioBlitz aims are to:

- Create an inventory of species in the survey area.
- Identify and map the natural assets of the target area, including species abundances and distribution, geological and hydrological features and vegetation communities.
- Identify new, threatened or rare species.
- Identify and record evidence of invasive species.
- Ensure that the information gathered is shared amongst land managers to inform conservation practice and policy, improve planning and management outcomes in the future.
- Encourage participants to develop an appreciation for nature and promote community involvement in protecting the natural environment, whilst inspiring the next generation of scientists, community volunteers and naturalists.
- Through volunteerism, create a sense of identity, stimulate behavioural change, and improve wellbeing amongst participants.
- In a post COVID world create the opportunity for people to experience their own backyard in new, invigorating, and exciting ways - by having citizens scientists work alongside experts, by discovering biodiversity at many levels and through the opportunity to see new landscapes that are not part of the regular tourist trails.
- By engaging with local communities on their own 'patch', aim to lower barriers to engagement with nature and science and build support for local conservation activities. Bring together diverse groups of people from the community, contributing to improved social cohesion and communities of practice.
- Create networking and membership recruitment opportunities for the WNNPA and help to leverage future funding.
- Facilitate more nature based or volunteer events.

4 WALPOLE WILDERNESS AREA

The Walpole Wilderness Area is the only gazetted wilderness in Western Australia. It consists of a group of conservation reserves totalling 377,714 hectares of some of the most ecologically rich and unique areas on earth.

The flora within the Walpole Wilderness area is renowned for its diversity, high level of endemism and relictual flora and fauna species and habitats with most areas boasting 600 to 800 species per km² (Figure 1).

The Walpole Wilderness Area concept was part of a proposal developed by the local community in 1998 to incorporate several reserves into a single integrated conservation reserve for nature conservation and was formally adopted by the WA Labor Government as an election commitment in 2001.

Although recognised for its outstanding beauty, highly specialised habitats, old growth forests, unique species and incredible biodiversity, this area is poorly surveyed and studied. Located in the highest rainfall zone of WA, it contains a number of specialised habitats that act as refugia for species that are relics from ancient times. The area is also recognised for its Aboriginal sites and landscapes of mythological, ceremonial, cultural and spiritual significance.

Climate change has caused a significant decrease in rainfall over the past few decades which has led to the decline or disappearance of some of these important relictual habitats. Other threats to the area include hydrological change, inappropriate fire regimes, invasive species and diseases.

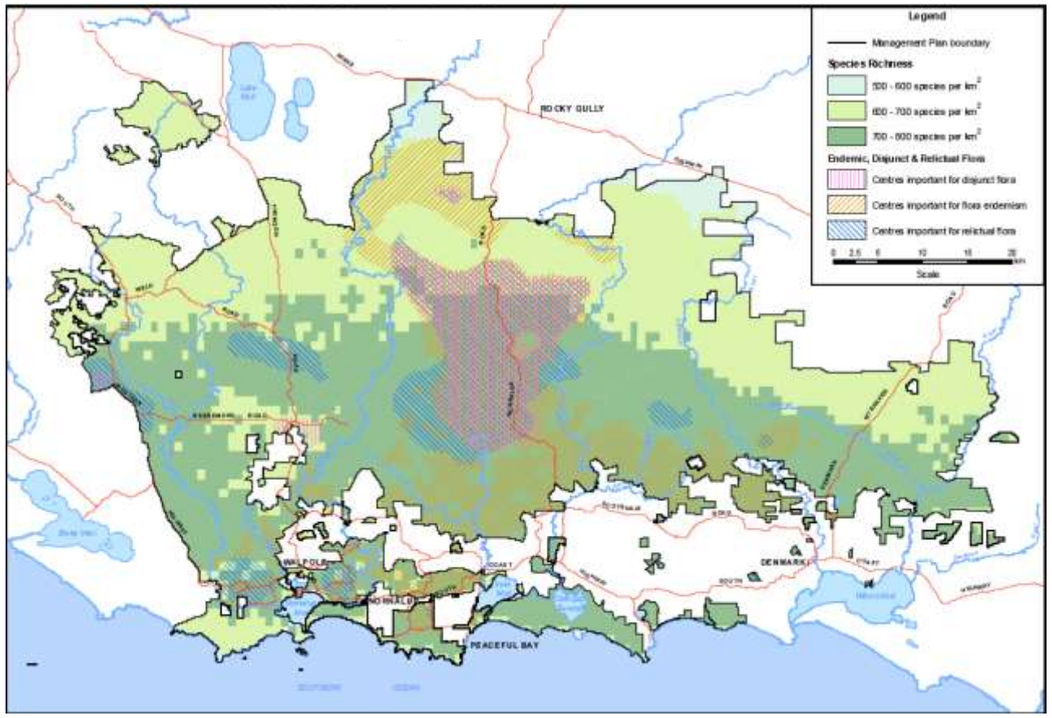


Figure 1: Walpole Wilderness Area renowned for its diversity, high level of endemism, relictual flora and fauna species, and habitats with most areas boasting 600 – 800 species per km² (Department of Environment & Conservation DEC, 2008)


Thelymitra (Sun Orchid)
© bushmonger


Taxandria parveceps (Tea Tree)
© Pimelea

> The Walpole Wilderness will be recognised as an important component of an international biodiversity hotspot, where natural and cultural values, such as wilderness, tingle forest, a threatened and highly endemic and relictual flora and fauna, threatened ecological communities, old growth forests and wetlands, and our knowledge of them, will be maintained and enhanced for future generations.
> (DEC 2008)


Red Velvet Mite
© em_lamond


Arniscus humeralis (Stink Bug)
© bushmonger

The WWBB22 recorded valuable information on threatened, rare, poorly known, common and even newly documented species in the Walpole Wilderness Area. This information will contribute to our greater understanding of the area and help to inform the future protection, conservation and management of this unique environment.

The WWBB22 comprised a series of surveys conducted in the tingle forests as well as a diversity of surrounding habitats including jarrah-marri forest, bullich forest, karri forest, tea-tree thickets, banksia woodland, jarrah woodland, peatlands, heathlands, granite outcrops and riparian zones.

There was a mix of activities to cater for differing levels of field experience and fitness. Most activities included “off trail” walking through vegetation and on uneven ground with participants walking from 200 metres to 5 kilometres from base camp. Each group was led by an experienced volunteer or specialist who guided the groups to best document the occurrence of flora, fauna and fungi species in the area.

The aim was to capture as much information as possible through the online platform of iNaturalist. This application allowed us to take a photo of a specimen, upload it, then a community of naturalists offered suggestions on its identity – it is a widely recognised database with all observations being collated into the Atlas of Living Australia. This allowed a wider range of participants to contribute to the WWBB22 even from their own home or workplace, originating from anywhere in the world.

You can access the Walpole Wilderness BioBlitz 2022 project through this link:
https://www.inaturalist.org/projects/walpole-wilderness-bioblitz-2022

5 WWBB22 SITES

Where did we go?

The Walpole Wilderness Bioblitz 2022 centred on 2000 hectares in tingle forest habitat near the iconic Hilltop and Circular Pool areas. Some of the locations explored included:

- Red, Yellow & Rate's Tingle forests
- Jarrah forest
- Banksia woodland
- Peat ecosystems
- Wet heath
- Creeklines
- Granite outcrops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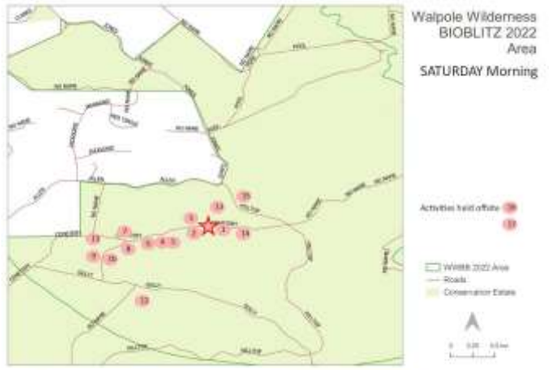
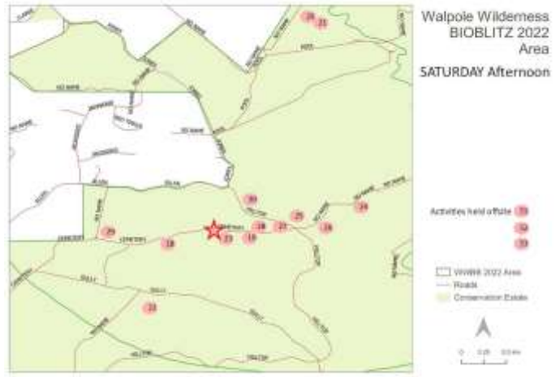
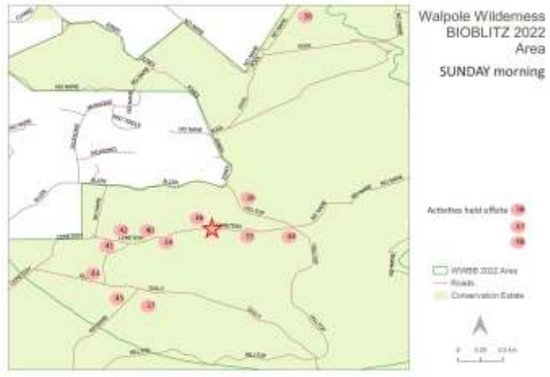
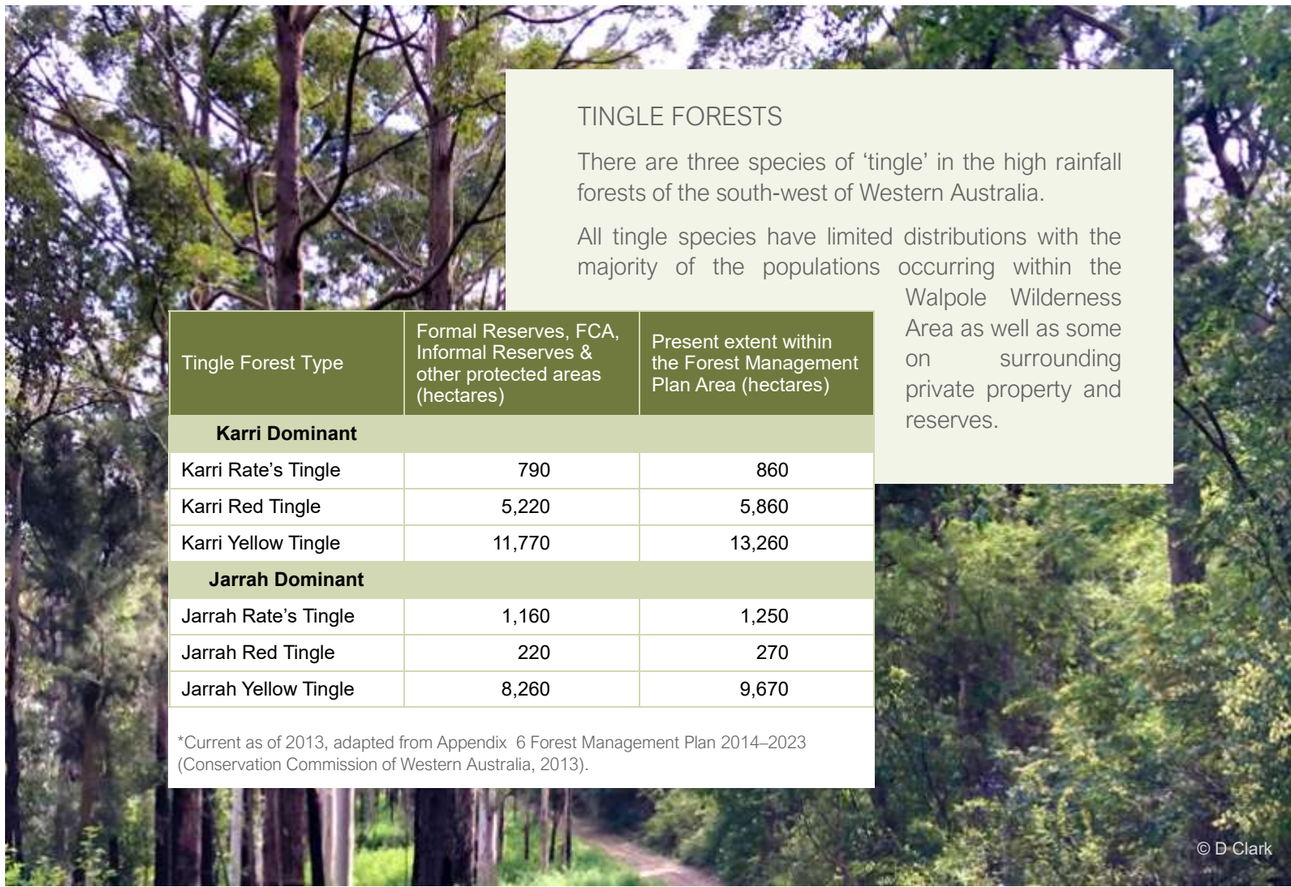







© D Clark

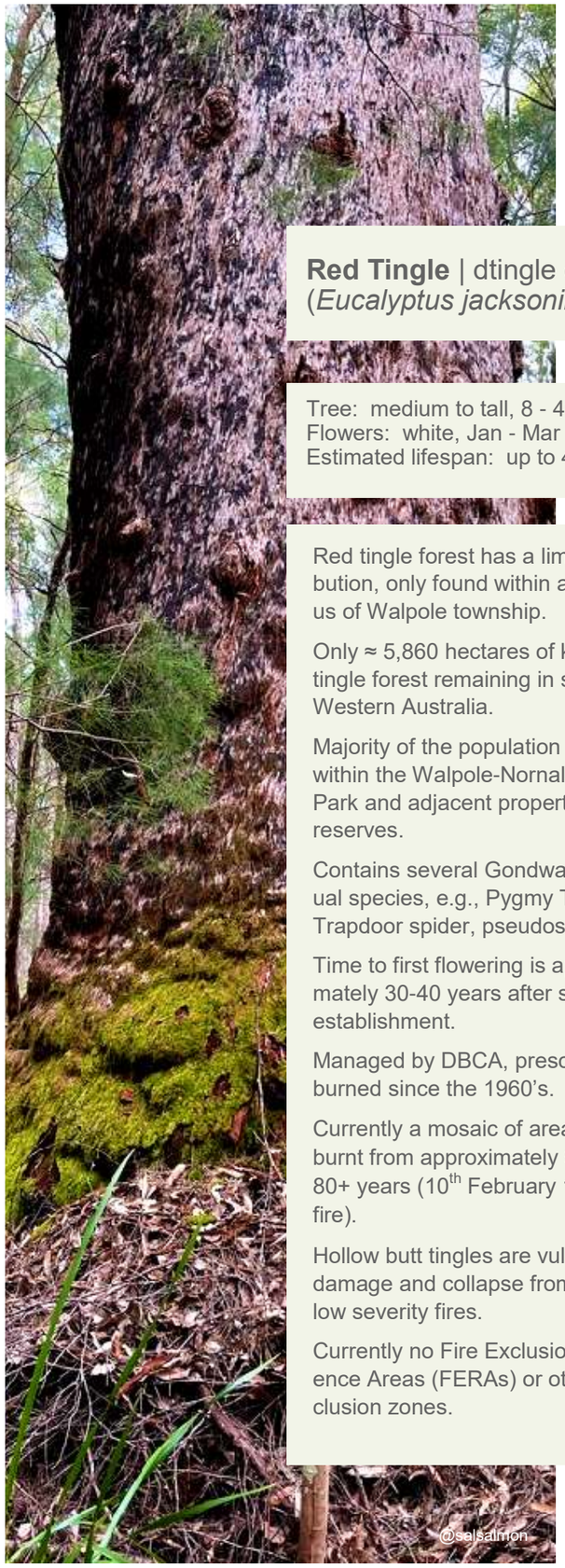
TINGLE FORESTS

There are three species of 'tingle' in the high rainfall forests of the south-west of Western Australia.

All tingle species have limited distributions with the majority of the populations occurring within the Walpole Wilderness Area as well as some on surrounding private property and reserves.

Tingle Forest Type	Formal Reserves, FCA, Informal Reserves & other protected areas (hectares)	Present extent within the Forest Management Plan Area (hectares)
Karri Dominant		
Karri Rate's Tingle	790	860
Karri Red Tingle	5,220	5,860
Karri Yellow Tingle	11,770	13,260
Jarrah Dominant		
Jarrah Rate's Tingle	1,160	1,250
Jarrah Red Tingle	220	270
Jarrah Yellow Tingle	8,260	9,670

*Current as of 2013, adapted from Appendix 6 Forest Management Plan 2014–2023 (Conservation Commission of Western Australia, 2013).



Red Tingle | dtingle dtingle (*Eucalyptus jacksonii*)

Tree: medium to tall, 8 - 45 m
Flowers: white, Jan - Mar
Estimated lifespan: up to 400 years

Red tingle forest has a limited distribution, only found within a 20km radius of Walpole township.

Only ≈ 5,860 hectares of karri red tingle forest remaining in southwest Western Australia.

Majority of the population occurs within the Walpole-Nornalup National Park and adjacent properties and reserves.

Contains several Gondwanan relictual species, e.g., Pygmy Tingle Trapdoor spider, pseudoscorpions.

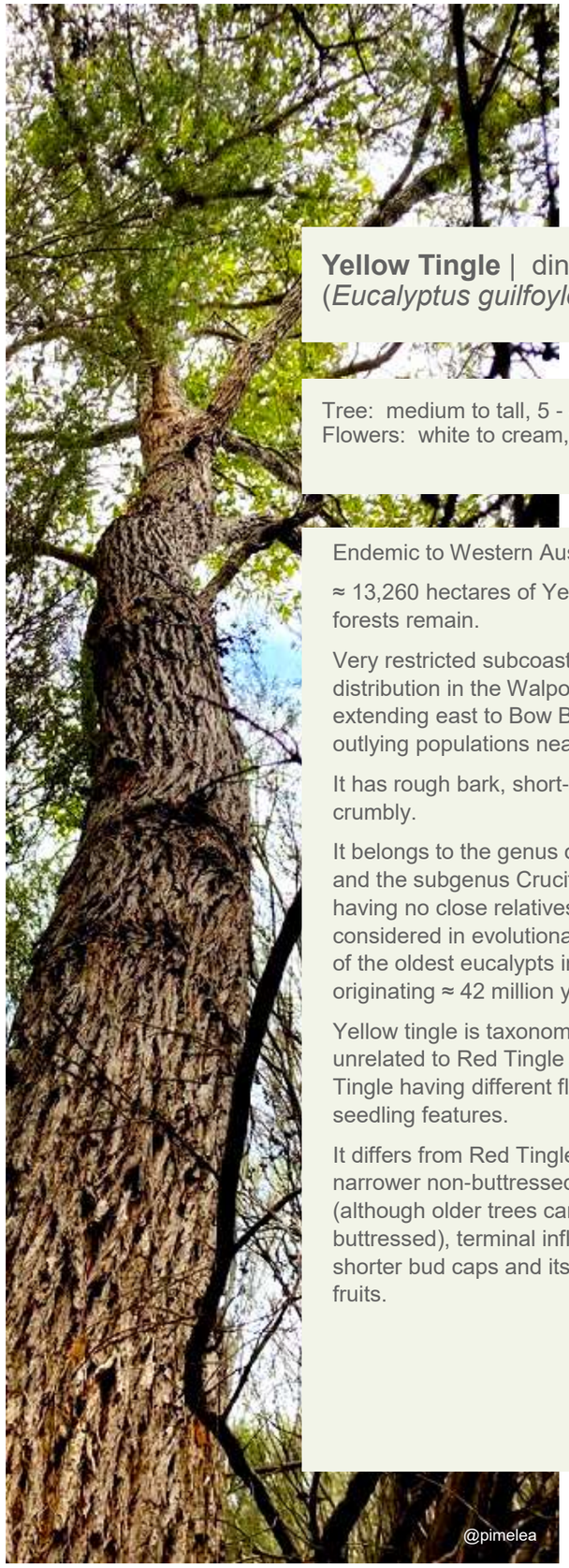
Time to first flowering is approximately 30-40 years after seedling establishment.

Managed by DBCA, prescribed burned since the 1960's.

Currently a mosaic of areas last burnt from approximately 9 months to 80+ years (10th February 1937 wildfire).

Hollow butt tingles are vulnerable to damage and collapse from fire, even low severity fires.

Currently no Fire Exclusion Reference Areas (FERAs) or other fire exclusion zones.



Yellow Tingle | dingul dingul (*Eucalyptus guilfoylei*)

Tree: medium to tall, 5 - 40 m
Flowers: white to cream, Nov - Jan

Endemic to Western Australia.

≈ 13,260 hectares of Yellow tingle forests remain.

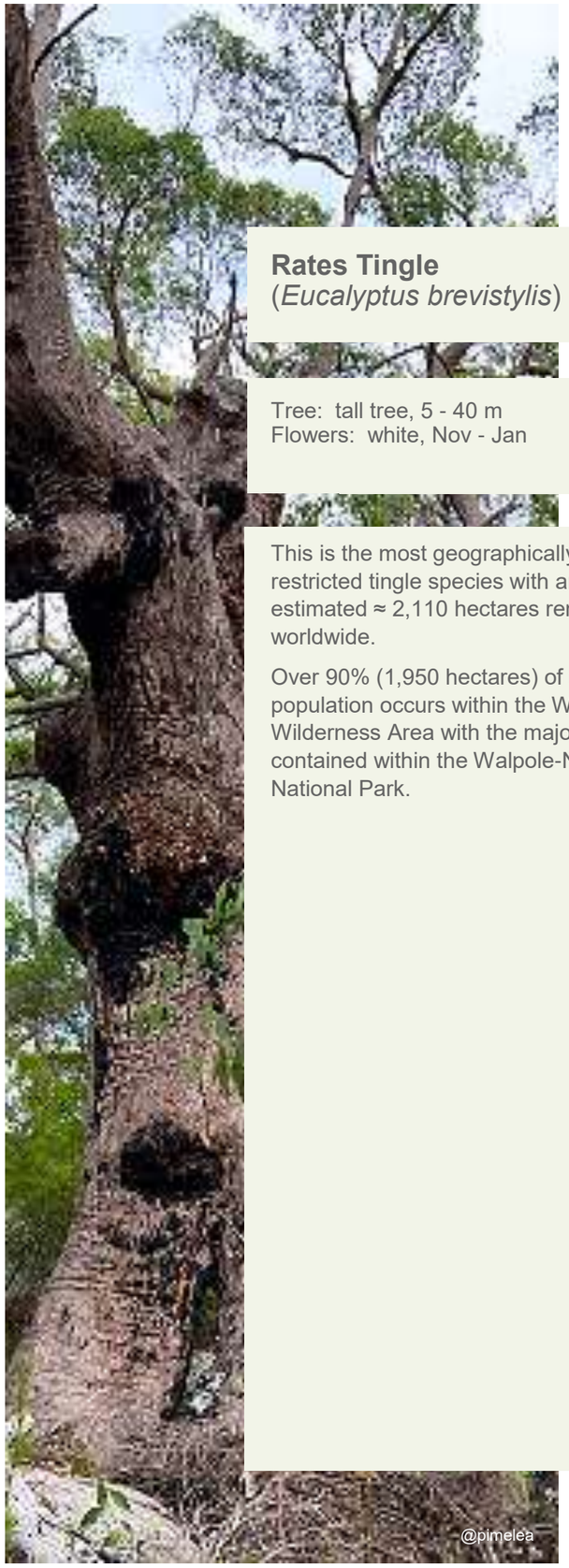
Very restricted subcoastal distribution in the Walpole area, extending east to Bow Bridge, with outlying populations near Denmark.

It has rough bark, short-fibred & crumbly.

It belongs to the genus of *Eucalyptus* and the subgenus Cruciformes, having no close relatives and is considered in evolutionary terms one of the oldest eucalypts in Australia originating ≈ 42 million years ago.

Yellow tingle is taxonomically quite unrelated to Red Tingle and Rate's Tingle having different floral and seedling features.

It differs from Red Tingle in its narrower non-buttressed trunk base (although older trees can be buttressed), terminal inflorescences, shorter bud caps and its cup-shaped fruits.



Rates Tingle (*Eucalyptus brevistylis*)

Tree: tall tree, 5 - 40 m
Flowers: white, Nov - Jan

This is the most geographically restricted tingle species with an estimated ≈ 2,110 hectares remaining worldwide.

Over 90% (1,950 hectares) of the population occurs within the Walpole Wilderness Area with the majority contained within the Walpole-Nornalup National Park.

7 METHODS OF SURVEYING, RECORDING & IDENTIFICATION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© R Meegan-Lowe


© T Gamblin


© D Clark


© L Mazzella


© L Mazzella

The WWBB surveys were undertaken by numerous groups of up to 10 individuals in the red tingle forests of the Walpole Wilderness and surrounding vegetation and habitat types. Within each group there was an experienced volunteer or specialist who guided the groups to best capture the presence of flora, fauna and fungi species in the area. Most surveys were about 3 hours duration, but some groups ventured out for longer.

It is not intended that the WWBB be regarded as a formal or comprehensive study of the species occurring within the area. Many species were identified by photographs only and were not collected or vouchered (submitted to specialists for identification). Limited skills and knowledge of some participants may have resulted in some errors in species identifications, although the iNaturalist platform supports the project in an ongoing way so corrections can be made to online observations and additional observations can be uploaded.

Experienced plant botanists, mycologists, ecologists and fauna specialists with experience in the region made efforts to assist with species identifications and curate the data at basecamp or subsequently through the iNaturalist platform or other methods of verification. Some flora, fungi and fauna specimens were collected, vouchered and identified before, during and following the WWBB to account for the varying seasonal occurrences of biodiversity.

Numerous nocturnal and cryptic species known to occur in the area were detected during the *Night Stalk* activity using monitoring equipment generously provided by Biologic Environmental Survey. Fauna motion cameras and songmeters were also set in place in numerous site locations before the WWBB from August to October 2022.

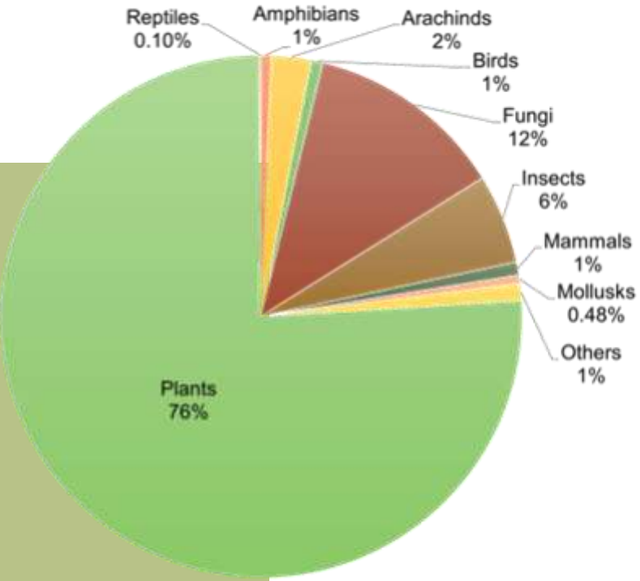
6 OBSERVATIONS SO FAR . . .

In total, approximately 43.62% of iNaturalist observations have been identified to species level and qualified as research grade (1,209 observations making up 278 species with 87 observers and 126 identifiers).

Approximately 55.4% of observations have been identified to genus or species level but need to be verified by an additional identification and/or to species level (1,533 observations making up 339 species with 90 observers and 137 identifiers).

There were also 0.98% casual observations of total species observed (27 observations making up 14 species with 12 observers and 0 identifiers) which were predominantly erroneous and/or had no photo or other evidence provided to verify the observations.

Additional flora, fungi, bird, mammal and invertebrate species were observed, identified and submitted in individual reports or species lists to the Walpole-Nornalup National Park Association (WNNPA). These species lists are summarised in the Appendices.



iNaturalist
Species Observations

- **484 species** have been identified to genus or species level
- **2,781 observations** have been made
- **96 observers** uploaded their observations
- **207 identifiers** joined the project to assist
- **4,664 identifications** have been made

8 FLORA

The flora within the Walpole Wilderness area is renowned for its diversity, high level of endemism and relictual species and habitats. The area of shrub, herb and sedgelands and mixed tingle forest between the Shannon River east to Denmark is one of two main species-rich areas within the south-west (Hearn et al. 2003) and is important for the conservation of high rainfall taxa (Lyons *et al*. 2000 cited by DEC, 2008).

There are about 1996 native vascular flora taxa representing 197 families and 689 genera recorded in the Walpole Wilderness and adjacent reserves (DEC, 2008). The most dominant plant families occurring within the Walpole Wilderness area are Orchidaceae (orchid family – 235 species), Proteaceae (banksia and grevillea family – 157 species), Papilionaceae (pea family – 153 species), Epacridaceae (heath family – 137 species) and Cyperaceae (sedge family – 120 species) (DEC, 2008).

Major plant genera include *Stylidium* (76 species), *Acacia* (74 species), *Caladenia* (70 species), *Leucopogon* (61 species), *Eucalyptus* (45 species), *Drosera* (43 species) and *Hibbertia* (42 species) (DEC, 2008).

Mapping of vegetation within the southwest region has identified 81 different vegetation complexes occurring within the Walpole Wilderness and adjacent reserves. Of these, to date, 52 vegetation complexes (approximately two thirds) are known to contain threatened, rare and/or priority flora species.

Total number of flora species observed during the WWBB22 (Appendix 2)

iNaturalist PLANTS
Species Observations

- **313 species** have been identified to genus or species level
- **2,020 observations** have been made
- **85 observers** uploaded their observations
- **95 identifiers** joined the project to assist


Lomandra nigricans
©pimelea


Tassel Flower
Leucopogon verticillatus
©orchidup


©pimelea

Most Observed FLORA species
39 observations

Karri Boronia
Boronia gracilipes

Description
Shrub: 0.3-1.2m high
Flowers pink, four petals,
July - December
Grows in shady places in
gullies and granite outcrops.


©L Mazzella

Threatened & Priority Flora Species & Ecological Communities within the Walpole Wilderness

Walpole Wilderness area is host to numerous threatened and priority (poorly-known) flora species and ecological communities as well as endemic species with limited distributions and specific habitat requirements (Appendix 1).

In 2008, there were 19 threatened flora species (also known as Declared Rare Flora (DRF), 145 priority flora species, 93 locally endemic flora species, 58 relictual flora species and 39 flora species with disjunct populations recognised within the Walpole Wilderness and adjacent reserves (DEC, 2008).

One recently nominated nationally threatened ecological community, one Priority 1 ecological community, one Priority 2 ecological community and one Priority 3 ecological community are known to occur within the Walpole Wilderness area.

Nationally nominated Threatened Ecological Community (TEC)

***Empodisma* peatlands of southwestern Australia**

In 2021, a nomination was submitted to the Australian Government, by the WNNPA, to recognise the peatlands of the high rainfall zone as a nationally Threatened Ecological Community due to the threats from climate change, altered fire regimes and feral pigs.

This community was prioritised for assessment in 2019. The Threatened Species Scientific Committee's assessment and advice to the Minister is due by 30 April 2023.

Proposed Conservation Status:
Endangered

Distribution:
South-west Western Australia

The attainment of this listing would be encouraging recognition for the plight of the peatland ecosystems within the Walpole Wilderness area and greater south-west region as they provide critical habitat to numerous threatened and priority flora and fauna species and to many other endemic species that rely solely on peatland habitats to persist.


Empodisma gracillum
©orchidup


Reedia spathacea
@tikiwanderer

Priority 1
Ecological Community
Poorly known (State Level PEC)

Reedia spathacea - Empodisma gracillimum - Schoenus multiglumis **dominated peat paluslopes and sandy mud floodplains of the Warren Biogeographical Region**

Sedges/rushes to about 1.5m in height of *Reedia spathacea/ Empodisma gracillimum/ Schoenus multiglumis* with *Homalospermum firmum* low open shrubs to scrub.

Threats: altered fire regimes, hydrological change, drying climate, pig activity, weed invasion, clearing.


Homalospermum firmum

Priority 2
Ecological Community
Poorly known (State Level PEC)

Sphagnum **communities of the Tingle Forest**

This community only occurs in the tingle forest which is restricted to the area between Bow Bridge in the east, Walpole to the west.


Drosera erythrogyne
@pimelea


Mosses – Class Bryospida
On karri wattle (*Trymalium odoratissimum*)
@tikiwanderer


Leafy Liverworts
Family: Lejeuneaceae
On karri wattle (*Trymaliuim odoratissi-*

Priority 2
Ecological Community
Poorly known (State Level PEC)

Epiphytic cryptogams of the Karri forest

These communities are not fixed in space or time but exist in a state of dynamic equilibrium.

Cryptogams associated with *Trymalium odoratissimum* subsp. *odoratissimum* and *Chorilaena quercifolia* in the karri forests of south-west WA. Comprises liverworts, mosses and lichens found on the bark of mature (plants >15 years old and about <50 years old) of *T. odoratissimum* subsp. *odoratissimum* and *C. quercifolia*. They are dependent on a cycle of regeneration of host species adjacent to an existing site occupied by the community. They typically occur in long unburnt pockets in the forest, usually in situations where high soil moisture and local high atmospheric humidity persists for most of the year along creek systems, valley, riparian zone and associated upper slopes.

Threats: clearing, altered fire regimes, weed invasion.

All of these ecological communities were identified within the area of the WWBB22. There was previous knowledge of some of these communities occurring within this area, although the multitude of species identified within them during the WWBB will hopefully build on the current knowledge available for these communities.


Karri Oak
Chorilaena quercifolia
@davidhorn

Threatened & Priority Flora Species

A search of the Threatened and Priority Flora Database (TPFL) and the WA Herbarium database (WAHerb) for the area of interest was conducted and supplied by DBCA.

There were 4 threatened flora species and 48 priority flora species identified as being within a 10-kilometre radius of the WWBB22 area.

WA 'Endangered' & nationally 'Critically Endangered'
Reedia spathacea

WA 'Critically Endangered' & nationally 'Vulnerable'
Albany Banksia
(*Banksia verticillate*)

WA 'Endangered' & nationally 'Vulnerable'
Dwarf Hammer Orchid
(*Drakaea micrantha*)

WA & nationally 'Vulnerable'
South-Coast Mignonette Orchid
(*Microtis globula*)

None of these threatened species were observed or identified from the WWBB22.


Swamp Helmet Orchid
Corybas abditus


Andersonia ?auriculata

Priority Flora Species OBSERVED during the WWBB22

Two Priority 3 flora species were identified being: *Andersonia auriculata* (unconfirmed) and Swamp Helmet Orchid (*Corybas abditus*).


King-in-His-Carriage
Drakaea glyptodon
@mcbrundrett

9 FUNGI, LICHENS & BRYOPHYTES

In WA, about 500 species of larger fungi have been recorded, mostly from the south-west (DEC, 2008). 206 named fungi species have been recorded in the Frankland/Kent area, and another 434 unnamed species and 61 unnamed genera have been recorded from the Walpole Wilderness area (Syme, 2004 cited by DEC, 2008). A regional survey of fungi and non-vascular flora has not been undertaken (DEC, 2008).

The Walpole Wilderness area contains more than 500 species of non-vascular flora, which includes algae, bryophytes, fungi and lichens. Bryophytes (mosses, liverworts and hornworts), fungi and lichens, have not been well studied within WA, and many unnamed, undescribed and unknown species exist (DEC, 2008). The Warren subregion contains the state's richest area for bryophytes, many of which are normally associated with rainforests (Hearn et al., 2003).

Threatened & Priority Fungi & Bryophyte species within the Warren Region

Very few non-vascular plants (algae, fungi, bryophytes and lichens) are contained within WA threatened and priority listings. These fungi and flora are poorly known in a taxonomic and conservation sense. It has been estimated that only 1% of WA's non-vascular flora is formally named and, therefore, it is assumed their low representation on threatened and priority lists does not reflect their true conservation status (DEC, 2008; DBCA, 2022).

There is one threatened ('critically endangered' in WA) and twelve priority non-vascular species currently known to occur within the Warren subregion. Six of these species are bryophytes. Four of the bryophyte priority listed species are Priority 2 and one is Priority 4. Seven species are lichens: one is listed as Priority 1; three are listed as Priority 2; and three are listed as Priority 3 (DBCA, 2022).

There are 72 liverwort families documented in Western Australia, although none of them are currently listed as threatened or priority species. The status of many species remains largely unknown, and further assessment is required (DEC, 2008; DBCA, 2022).

To date, no confirmed threatened fungi, bryophyte or lichen species were known to be observed or identified during the WWBB22.

iNaturalist FUNGI
Species Observations

- **104 species** have been identified to genus or species level
- **347 observations** have been made
- **68 observers** uploaded their
- **32 identifiers** joined the project to assist

Agaricomycetes
@pimalea

Total number of Fungi and Bryophyte species OBSERVED during the WWBB

A total of 104 species of fungi, including lichens, were observed during the WWBB22 and identified to genus level on iNaturalist with 347 observations, 68 observers and 32 identifiers. Many fungi species were only identified to genus level or assigned to a higher order taxonomic rank.

There were 26 bryophyta species (mosses), 15 liverworts and 1 hornwort species observed and identified during the WWBB22 (Appendix 3).

Multiple surveys were conducted before the WWBB to ensure a diversity of fungi was captured throughout the season. All specimens were photographed, and some samples were collected for identification purposes and to derive a DNA sample from.

> *"During the most recent BioBlitz, a number of fungi were found on wood. Two were black wood-rotting ascomycetes and were not worth collecting, being far too old. However, three white corticioid or 'paint' fungi were collected and may be able to be assigned names (at least to Genera) following further examination. All of them were found on fallen, dead branches or twigs of varying thicknesses. One had fine pores, another a cracked surface, while the third was found on well-rotted wood, part of which was very soft. No truffle-like fungi were found…….. some small Piptoporus australiensis (curry punks) were spotted in a fire scar high in a Karri about 30m west of Allen Road. A common species, its sporocarps begin to emerge in late summer – mostly on dead wood and stumps. It causes a brown cubical rot and is distinguished by its curry-like odour."*
>
> *Katrina Syme*

Bryophytes including Mosses, Liverworts & Hornworts

By Em Lamond

Knowledge of bryophyte diversity and distribution in Western Australia is much poorer than for flowering plants. In herbarium records twenty percent of the species recorded in western Australia are known only from a single collection in a single location, with more than half having ten or less records. Citizen science can help fill this knowledge gap. The Walpole-Nornalup area is an area of particular interest bryologically, as even with the limited information available, it's clear that there's higher bryodiversity in that region. The results from the Bioblitz reflect this, with at least 43 of the approximately 400 taxa known from the state recorded.

Due to the low numbers of records of bryophytes in western Australia each observation has added greatly to the knowledge of bryophyte distribution and ecology in western Australia, this is of particular importance when considering future and current climate change as well as the


PRIORITY 4 SPECIES
Western Giant-leaved Moss
Pleurophascum occidentale
@orchidup


Chocolate Tube Slimes
Genus Stemonitis
@kbryan


Curry Punk
Piptoporus australiensis


Orange Fan
Anthracophyllum archeri
@bianca523


Hygrocybe polychroma
@drkrisoz


Hairy Curtain Crust
Stereum hirsutum
@diana_rod


Order Pezizales
@kwonganlover


Lactarius eucalypti
@dizzyurid


Moss Bells
Galerina sp.
@haydenat


Dung Roundhead
Protostropharia semiglobata
@haydenat

(Continued from page 23)

advances in AI and machine learning, for machine learning to be applicable for understanding climate in relation to bryophytes and what their relatively higher sensitivity to climate can tell us about climate change, large datasets are required.

A case study in an observation of particular note is the discovery of the rare and poorly known WA endemic *Calymperastrum latifolium*, a unique species who's sporophyte has never been seen that bares traits from two different orders. It lives only on the burnt trunks of Macrozamia cycads and apart from that little is known of it's ecology.

This species was discovered in Perth in the 1800's and the type location lost, it was known only from the Mt Chudalup area for several decades.

With this discovery, on the side of an immense and ancient cycad under a tall dense canopy of tingle and karri, the knowledge of it's habitat needs is expanded greatly. Citizen science all via iNaturalist has expanded the known populations from a small area around a single granite outcrop to now: Tall Karri Tingle forest, several populations on wetland adjacent hills on the swan coastal plain, and granite peak in the Darling range. Whilst it requires a charred macrozamia trunk as a substrate, it's bioblitz discovery in a forest who's last fire was many decades ago indicates that this species doesn't require high frequency fire intervals to survive.

Of greatest value to bryology in western Australia could arguably be the overcoming of what some might call "bryophyte blindness", adapted from the concept of "plant blindness", "bryophyte blindness" is the way that bryophytes can be invisible or confusing or just "noise" to people until they have the chance to sit down and really have a good look at a patch of moss or liverworts. Some participants noted surprise when they first realised that the structure of a moss is more akin to a flower or a plant than fuzz or fur, or that there could be so much beauty and detail hidden in plain sight.


PRIORITY 2 SPECIES
Djiriji Moss
Calymperastrum latifolium
@em_lamond


Rainbow Ants
Iridomyrmex sp.
©pimelea

10 FAUNA

Knowledge and information of fauna within the Walpole Wilderness area is still very limited, particularly information on the distribution, ecology and conservation status of reptiles, amphibians and invertebrates (DBCA, 2008).

Endemic Fauna

In total, there are 43 species of vertebrate fauna that occur in the Walpole Wilderness and adjacent reserves that are endemic to the south-west of WA (DEC, 2008).

Threatened, Priority & other Specially Protected Fauna

The Commonwealth's Environmental Protection and Biodiversity Conservation (EPBC) Act 1999 provides a listing of nationally threatened fauna species. There are numerous fauna species listed under the EPBC Act that are known to occur in the Walpole Wilderness area. All of these species are also listed as threatened under the State's Biodiversity Conservation Act 2016 but some have different conservation status to national listings (DEC, 2008).

There are a number of vertebrate fauna species documented within the Walpole Wilderness area and adjacent reserves that are listed as rare or likely to become extinct. These are: the 'critically endangered' Western Ringtail Possum (*Pseudocheirus occidentalis*); Woylie (*Bettongia penicillata ogilbyi*); the 'endangered' Australasian Bittern (*Botaurus poiciloptilus*); Baudin's Cockatoo (*Zanda baudinii*); Carnaby's Cockatoo (*Zanda latirostris*); Western Bristlebird* (*Dasyornis longirostris);* the 'vulnerable' Quokka (*Setonix brachyurus*); Chuditch (*Dasyurus geoffroii*); sub-Antarctic Fur Seal (*Arctocephalus tropicalis*), Australian Sealion (*Neophoca cinerea*); Forest Red-tailed Black -cockatoo (*Calyptorhynchus banksii naso*); Malleefowl* (*Leipoa ocellata*); and Sunset Frog (*Spicospina flammocaerulea*).

**It should be noted that some of these threatened species listed as occurring within the area have not been observed or documented for some time.*

There are also several threatened and priority invertebrate species known to occur within the Walpole Wilderness area including two state and nationally listed 'endangered' species, the Walpole Burrowing Crayfish (*Engaewa walpolea*) and the Tingle Pygmy Trapdoor Spider (*Bertmainius tingle*). Please note, this is not an exhaustive list of threatened invertebrate species within the area.

Species occurring within the Walpole Wilderness area listed as 'conservation dependent' are the Southern Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) also listed nationally as 'vulnerable' and Muir's corella (*Cacatua pastinator pastinator*). Two fauna species are included in 'other specially protected fauna', being the New Zealand fur-seal (*Arctocephalus forsteri*) and Peregrine Falcon (*Falco peregrinus*).

See Appendices 4 through to 10 for fauna species observations lists divided by major group.

11 BIRDS

There are at least 144 species of native birds within the Walpole Wilderness area and adjacent reserves. This diversity is considered relatively high, particularly within open forests, open woodlands and low open woodlands, as it represents about 79% of the birds recorded within forest areas of the south-west (DEC, 2008).

There are no endemic bird species exclusive to the Walpole Wilderness area although Baudin's Cockatoo (*Zanda baudinii*), Carnaby's Cockatoo (*Zanda latirostris*), Red-capped Parrot (*Platycercus spurius*), Western Rosella (*Platycercus icterotis*), Western Ground Parrot (*Pezoporus flaviventris*), White-breasted Robin (*Quoyornis georgianus*), Red-winged Fairy Wren (*Malurus elegans*), Western Thornbill (*Acanthiza inornata*) and the Red-eared Firetail (*Stagonopleura oculata*) are endemic to the south-west (DEC, 2008). All of these species occur within the Walpole Wilderness area (with the exception of the Western Ground Parrot that occurred historically) and were all observed during the WWBB, apart from Carnaby's Cockatoo which is also known to occur in the area.

Total number of bird species OBSERVED during the WWBB22

A total of 20 bird species were observed and identified during the WWBB22. Birdlife WA undertook several targeted surveys during the course of the WWBB22 and prepared a separate report and species list to document their findings (Appendix 5).

A full bird species list can also be found on Birdata at: https://birdata.birdlife.org.au/survey?id=5546731 &h=8c0cea5b

The total Birdlife WA count relevant to the survey area during the period of the WWBB22 was 35 species. A search of Birdata records from the North Walpole area considered relevant to the WWBB22 location indicated a total number of 97 species recorded. This shows that approximately a third of the potential species in the area were detected in the two-day WWBB22 period (Reid, 2021).

In addition, 20 bird species were observed and identified during the WWBB22 project and uploaded to iNaturalist from community survey observations, some of which were the same species as identified by Birdlife WA during the WWBB22, thus bringing the total number of bird species observed to 47

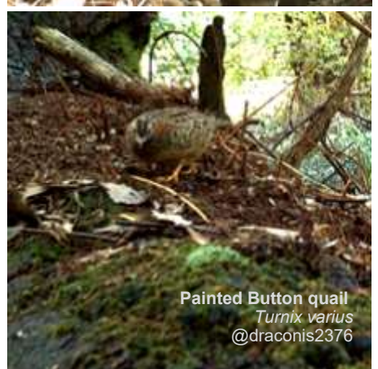
Threatened & Priority bird species OBSERVED during the WWBB

Carnaby's Cockatoo (endangered), Baudin's Cockatoo (endangered) and Forest Red-tailed Black-cockatoo were observed by Birdlife WA and participants during the WWBB22.

The three threatened Black-cockatoo species are regularly observed in the WWBB22 area, particularly Baudin's Cockatoo (personal observation). The area provides suitable breeding habitat and feeding areas for these hollow-dependent species. Breeding has been documented in the area.

iNaturalist BIRDS
Species Observations

- **20 species** have been identified to genus or species level
- **20 observations** have been made
- **7 observers** uploaded their observations
- Most bird observations were directly entered into birddata.birdlife.org.au



Excerpt from Birdlife WA report

BirdLife WA supported the bird's survey sessions of the second Walpole Wilderness Bioblitz (WWBB22) held on 1st and 2nd October at the Tingle Forest Walpole.

A total of 37 bird species were found with three bird's survey sessions covering four locations with a range of habitats and burnt/unburnt area.

The intent of these surveys are not focusing on to compare the difference of the habitats but rather in line with the Bioblitz's intention to look for as many species as we can during the event - in a sharing and learning atmosphere.

The bird survey results are entered into Birdata:

Session 1: https://birdata.birdlife.org.au/survey?id=5899645&h=d1ba5124

Session 2: https://birdata.birdlife.org.au/survey?id=5899648&h=c1180f6b

Session 3A: https://birdata.birdlife.org.au/survey?id=5899650&h=a31aeae6

Session 3B: https://birdata.birdlife.org.au/survey?id=5899653&h=dc7cde2c

An additional bird list of 25 species was also generated to include the sightings during the recce (two days before the Bioblitz around the same area) and those recorded within 10km from the Tingle Forest for a reference purpose.

A full report was prepared by Alfred and Hidi Lau and is available on the Walpole Wilderness website.

Also see Appendix 5: Bird species observations lists.

Threatened & Priority bird species within the Walpole Wilderness

Currently, there are three known threatened bird species occurring within the Walpole Wilderness area being: the state and nationally 'endangered' Baudin's Cockatoo (*Zanda baudinii*) and Carnaby's Cockatoo (*Zanda latirostris*); and state and nationally listed 'vulnerable' Forest Red-tailed Black-cockatoo (*Calyptorhynchus banksii naso)*. The Peregrine Falcon (*Falco peregrinus*) is also known to occur in the area and is listed as an 'other specially protected' species.

Although other threatened bird species such as the Western Ground Parrot (*Pezoporus flaviventris*), Western Bristle Bird (*Dasyornis longirostris)* and Malleefowl (*Leipoa ocellata*) are also listed as occurring within the area, the records of their occurrences are not recent.

The three black-cockatoo species are declining in numbers due to ongoing threats to their habitat.

There is limited information about their population numbers, dynamics or critical habitats within the Walpole Wilderness area. Baudin's Cockatoo are considered more common in the area than Forest Red-tailed Black-cockatoo and Carnaby's Cockatoo. Nest trees and night roosts are challenging to locate due to the vastness of the area and difficulty in navigating the terrain.

12 MAMMALS


Yellow-footed Antechinus
Antechinus flavipes
@draconis2376


Scats: Kangaroos, Wallabies etc.
Family Macropodidae
@bushmonger


Western Grey Kangaroo
Macropus fuliginosus
©draconis2376


Common Brushtail Possum
Trichosurus vulpecula
@draconis2376


Quenda
Isoodon fusciventer
@draconis2376

There are at least 27 species of native mammals within the Walpole Wilderness area and adjacent reserves (including marine mammals). The area has a relatively high diversity of mammals although many species populations have declined and now exist only as small, isolated populations (DEC, 2008). The major causes for these population declines are considered to be extensive land clearing and logging since European settlement destroying vital habitat, altered fire regimes and predation by introduced predators, mainly foxes and cats.

Of the mammal species occurring within the Walpole Wilderness area, 33% (9 out of 27 species) are endemic to the south-west, including the Western Brush Wallaby (*Macropus irma*), Quokka (*Setonix brachyurus*), Western Ringtail Possum (*Pseudocheirus occidentalis*), Honey Possum (*Tarsipes rostratus*), Mardo (*Antechinus flavipes*), Common Dunnart (*Sminthopsis gilberti*), Grey-bellied Dunnart (*Sminthopsis griseoventer*), Gould's Long Eared Bat (*Nyctophilus gouldi*) and the Western False Pipistrelle (*Falsistrellis mackenziei*).

Total number of Mammal species OBSERVED during the WWBB22

In total 15 mammal species were observed or identified from their scats, tracks or other traces such as diggings during the WWBB22, including several mammal species that were identified from fauna motion cameras set up within the area from August to October 2022 and included in the WWBB22 and iNaturalist observations.

Out of the 15 mammal species identified, 13 were native mammals and 2 were introduced mammals, being feral cat and red fox.

See Appendix 6: Mammal species observations list.

iNaturalist MAMMALS
Species Observations

- **11 species** have been identified to genus or species level
- **23 observations** have been made
- **8 observers** uploaded their observations

Threatened & Priority Mammal species OBSERVED during the WWBB22

One threatened mammal species, the state and nationally listed 'vulnerable' Quokka (*Setonix brachyurus*) and one Priority 4 mammal species, Southwestern Brown Bandicoot/Quenda (*Isoodon fusciventer*) were detected from fauna motion cameras set up within the WWBB22 area from August to October 2022.

Scats and suspected runnels (tunnels through the undergrowth) of Quokka were also observed by participants during the WWBB22.

Quokka (*Setonix brachyurus)*

Aboriginal names: The quokka is known to the Aboriginal Noongar people of south-west WA by a range of names including 'Ban-gup', 'Bungeup', 'Quak –a' (Gould 1863, Shortridge 1909), 'kwoka' and 'bangop' (Abbott 2001).

Description: Quokkas have a stout build and rounded bodies with a short, broad tail and a hunched posture. They have greyish-brown, coarse fur with lighter underparts. Their ears are small and rounded and their face is more flattened than that of other wallabies. Their body weight ranges between 2.7-4.2kg and head and body length is between 400-540mm.

Conservation status: Listed 'vulnerable' under the WA Biodiversity Conservation Act 2016 and Commonwealth Environmental Protection and Biodiversity Conservation (EPBC) Act 1999. Their recovery is guided by a Recover Plan (DEC, 2013). The overall long-term objective of the recovery program is to at least maintain their current distribution and abundance. In 2007, population estimates of mainland quokkas in the southern forests were estimated to be less than 700 individuals (DSEWPaC 2012).

Distribution: Once very common in the south-west of WA in areas such as the Swan Coastal Plain and Gingin, they are now uncommon on the mainland and confined to isolated pockets within the south-west of WA. They are found in Dwellingup, Jarrahdale, Harvey, Collie, the Stirling Range National Park and along the South Coast to Two People's Bay. There are large populations on Rottnest Island and Bald Island (east of Albany).

Habitat: Mainland quokkas are documented inhabiting densely vegetated areas bordering watercourses and swamps in jarrah, marri, karri and tingle forests.

Threats: Foxes, feral pigs, cats, lack of potable water (on Rottnest Island), habitat destruction from clearing, logging and fire.


Priority 4 fauna species
Quenda – Southern Brown Bandicoot
Isoodon fusciventer
@draconis2376


Priority 4 fauna species
Yellow-footed Antechinus – Mardo
Antechinus flavipes
@draconis2376


VULNERABLE
Quokka (mainland)
Setonix brachyurus
@draconis2376


@draconis2376


@draconis2376

Western Ringtail Possum
(*Pseudocheirus occidentalis*)

The 'nationally 'critically endangered' Western Ringtail Possum is known as ngwayir to the Noongar people.

Ringtails spend most of their time in trees particularly in the canopy of peppermint (*Agonis flexuosa*) woodland and eucalypt forests. They feed on leaves and like to forage for food at night. They build nests or resting places called 'dreys' from the foliage and also use tree hollows. Ringtails have a relatively small home range of less than 5 hectares.

There are not many records of their presence in the Walpole Wilderness Area, although they have been observed within the Walpole Wilderness Area near Mount Lindesay and in red tingle forest and at the Treetop Walk. No comprehensive survey effort has been undertaken in the area.

A targeted survey to look for scats and signs of occupation was conducted by fauna specialists and WWBB22 participants along the Frankland River. No evidence of their occurrence was found.

Sightings of threatened fauna can be reported to DBCA by filling out a fauna report form. See links below:
https://www.dpaw.wa.gov.au/images/documents/plants-animals/monitoring/forms/fauna-report-form.doc
https://www.dpaw.wa.gov.au/images/documents/plants-animals/monitoring/forms/simple-fauna-report-form.doc

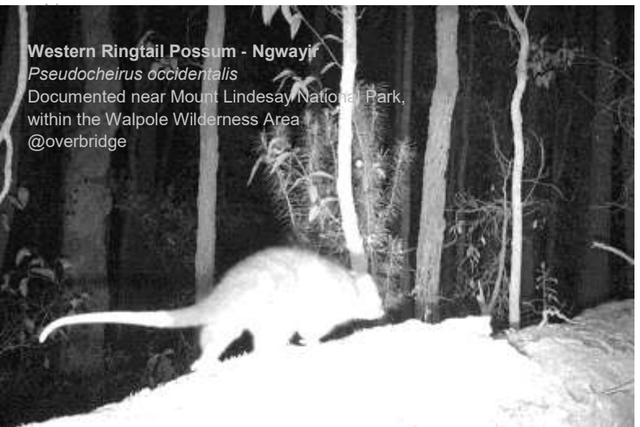
Key threats to Ringtails

- Habitat destruction and fragmentation
- Predation by introduced predators (foxes and feral cats)
- Death by car strike and domestic pets
- Altered fire regimes and the effects of drought

The Western Ringtail Possum population is fragmented, still declining, and the declines are expected to continue. Although this species is undergoing continuing decline, it is considered the rate of decline was less steep in the 2015-2018 period than the 2005-2015 period.

The nationally 'critically endangered' Western Ringtail Possum ('ngwayir') and 'vulnerable' Western Quoll ('chuditch') are part of the 20 species that the Australian Government has prioritised resource allocation to support the species recovery effort.

The Australian Government's Threatened Species Strategy aims to demonstrate an improved population trajectory for at least half of the prioritised mammal species.



Western Ringtail Possum - Ngwayir
Pseudocheirus occidentalis
Documented near Mount Lindesay National Park, within the Walpole Wilderness Area
@overbridge

Western Quoll – Chuditch (*Dasyurus geoffroii*)
Observed within the Walpole Wilderness Area near Mount Frankland North National Park, Oct 2021
@draconis2376

Western Quoll – Chuditch
(*Dasyurus geoffroii*)

The Western Quoll or 'chuditch' as it is known to the Noongar people, is a native predator species. It previously occurred throughout much of arid and semi-arid Australia, but its range has contracted significantly from >90% of mainland Australia after European settlement and the introduction of foxes and feral cats. By the 1950s, it was restricted to south-western Australia, where it occurs mostly in forested and woodland areas. Approximately 99% of the remaining populations (natural and translocated) are in south-west WA.

It is mainly a nocturnal species and mostly rests in hollow logs or earth burrows in the day. It primarily forages on the ground at night and can eat any animal smaller than a rabbit. They have been seen to climb trees.

Key threats to their persistence are habitat destruction and modification through the combined influences of land clearing, inappropriate fire regimes and grazing by both stock and feral herbivores, as well as predation of feral cats and foxes, particularly on young animals.

Over the last 20 years it has been re-established through translocations at several sites in southern Western Australia (WA) and in the Flinders Ranges, South Australia (SA).

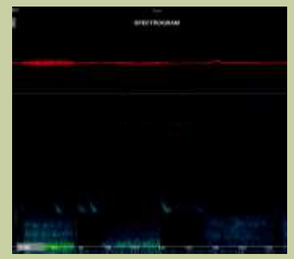
Population trends for the periods 2005-2015 and 2015-2018 were generally stable, with no significant overall improvement in trajectory from 2005-2015 to 2015-2018. Approximately 99% of the remaining population is in south-west WA. These populations mostly increased or had stable trends to 2015; although some populations have declined in recent years.

Western Quoll – Chuditch
Dasyurus geoffroii
Mount Lindesay National Park
Dec 2021
@em_lamond

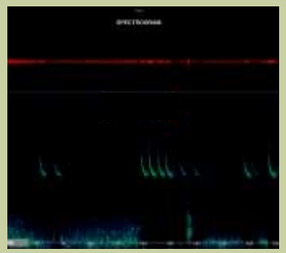
WWBB22 NIGHT STALK

It was a relatively quiet night when we ventured out on the Friday 30th September of the WWBB22. Participants found many interesting invertebrates and a couple of birds but no mammals were seen or heard except for a couple of bats. Bats are detected by recording their ultra-sonic calls using a special microphone plugged into an smart phone or tablet.

Four bats were recorded overall during the WWBB22 night stalk. On the top right is a call that is in the 26 - 40kHz range and has a slightly curved shape which is suggestive of the rare Western False Pipistrelle (*Falsistrellus mackenziei*). On the bottom right, the call is also slightly curved but in the higher range of 45-70 kHz which is consistent with the Chocolate Wattled Bat (*Chalinolobus morio*). We also recorded another bat, the Southern Forest Bat (*Vespadelus regulus*) and heard (with our ears this time) the high pitched call of the White Striped Mastiff bat (*Tadarida australis*). D. Edmonds



Western False Pipistrelle
(*Falsistrellus mackenziei*)



Chocolate Wattled Bat
(*Chalinolobus morio*)

Introduced Mammal species OBSERVED during the WWBB22

Several introduced animals occur within the Walpole Wilderness area and are known to cause significant damage and degradation to the environmental values of the area through predation on native animals, destruction or modification of habitats or competition for valuable food resources.

Two introduced (non-native) animals were observed during the WWBB22, being feral cat (*Felis catus*) and red fox (*Vulpes vulpes*). These species are all declared pests under the Biosecurity and Agriculture Management (BAM) Act 2007 due to their significant adverse impacts on agricultural and environmental values. They are categorised as species that should have some form of management applied that will alleviate their harmful impacts, reduce their numbers or distribution or prevent or contain their spread (DPIRD, 2020).

There is strong evidence that foxes and cats have caused the decline of many small to medium-sized species of Australian native mammals, often referred to as 'critical weight range' species, falling within an intermediate body weight range of 35 grams to 5.5 kilograms. Critical weight range species are considered to be most at-risk of being predated on by foxes and cats (Woinarskia et al., 2015).

These introduced species and the processes by which they impact on biodiversity, are listed as key threatening processes under the Commonwealth's EPBC Act 1999. Threat abatement plans provide national coordination to manage the impacts on biodiversity and their management has been identified as a high priority within the Walpole Wilderness and Adjacent Parks and Reserves Management Plan (DEC, 2008).

Red Fox
Volpus volpus
@draconis2376

13 REPTILES

Reptiles can be found in a variety of habitats within the Walpole Wilderness area including coastal dunes, flats, swamps, areas of more open vegetation and granite outcrops. Within the Walpole Wilderness area, 32 species of native reptiles have been identified and recorded (Appendix 7). Of these, 20 species are skinks, and 6 species are snakes (elapids or front-fanged venomous snakes). There are only low numbers of goannas, geckos and tortoises (DBCA, 2008).

Threatened & Priority Reptile species within the Walpole Wilderness

The skinks within the Walpole Wilderness area have a high level of endemism and 13 out of the 20 skinks recorded (65%) are only found in the south-west of WA. The Short-nosed snake (*Elapognathus minor*), listed as a Priority 4 species, and Muller's Snake/ Square-nosed snake (*Rhinoplocephalus bicolor*), are also endemic to the south-west and both are known occur within the Walpole Wilderness area (DEC, 2008).

See Appendix 7: Reptile species observations list.

iNaturalist REPTILE
Species Observations

- **3 species** have been identified to genus or species level
- **3 observations** have been made
- **2 observers** uploaded their observations
- **6 identifiers** joined the project to assist

14 AMPHIBIANS

There are at least 19 frog species within the Walpole Wilderness area. Substantial areas of swamps, sedgeland, shrubland and forest, such as the Mt Soho and Owingup swamps, support one of the richest areas for frogs in Western Australia (DEC, 2008).

Threatened & priority frog species within the Walpole Wilderness

Species such as the sunset frog (*Spicospina flammocaerulea*), the Nornalup frog (*Geocrinia lutea)*, and the roseate frog (*Geocrinia rosea)* are very restricted in their occurrence throughout the Walpole Wilderness area.

Total number of Amphibian species observed during the WWBB22

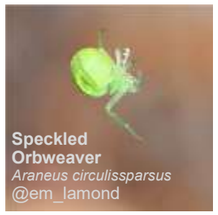
All amphibian species identified during the WWBB22 were frogs. Eighteen observations of 8 frogs were recorded, although only 5 species have been identified to species level being:

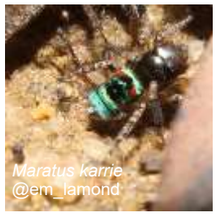
- Motorbike Frog – *Ranoidea moorei*
- Nichollas Toadlet – *Metacrinia nichollsi*
- Quacking Frog – *Crinia georgiana*
- Slender Tree Frog – *Littoria adelaidensis*

See Appendix 8: Amphibian species observations list.

iNaturalist AMPHIBIANS
Species Observations

- **8 species** have been identified to genus or species level
- **18 observations** have been made
- **14 observers** uploaded their observations
- **13 identifiers** joined the project to assist





Threatened & Priority invertebrate species OBSERVED during the WWBB22

Tingle Pygmy Trapdoor Spider *(Bertamainius tingle)*

Several active and many disused burrows of Tingle Pygmy Trapdoor Spider were found during the WWBB22 and video confirmation was taken. This spider is a threatened species listed as 'endangered' under state and national environmental legislation.

Description: Less than 10mm long. Discovered in 1990 (accidentally) in a discarded bark sample that was home to another spider

Conservation status: Listed 'endangered' under the WA Biodiversity Conservation Act 2016 and Commonwealth Environmental Protection and Biodiversity Conservation (EPBC) Act 1999.

Habitat: Lives on tingle or karri bark and burrows in soil

Distribution: Currently only known from 2 (or 3) locations in Walpole-Nornalup National Park

Threats: Destruction of habitat remains the major threat to the species with the major threatening processes being inappropriate fire regimes and climate change.

15 INVERTEBRATES

Total number of Invertebrate species OBSERVED during the WWBB22

See Appendix 9-11: Invertebrate species observations list.

iNaturalist INVERTEBRATES
Species Observations

- **Arachnids:** 38 species, 71 observations, 32 observers, 24 identifiers
- **Insects:** 38 species, 131 observations, 43 observers, 62 identifiers
- **Crustaceans:** 1 species, 1 observations, 1 observer, 2 identifiers
- **Molluscs:** 3 species, 14 observations, 12 observer, 9 identifiers

Excerpt from Walpole Wilderness Bioblitz 2022 Invertebrate report: Identifications and notes by Julianne Waldock, Mark Harvey (arachnids and myriapods) and Corey Whisson (molluscs) (also see Appendix 10).

Family Migidae
Bertmainius tingle **(Main, 1991) – WA & nationally 'endangered'**
Notes: vacant burrows were located at sites 5 & 35, which are only 2 km from the Big Tingle Tree, one of the confirmed localities for *B. tingle.*

Oratemnus **sp. nov. – a pseudoscorpion**
Notes: this new species is very rare in collections from SW WA.

Protochelifer **sp. nov. 2**
Notes: this new species has never been collected previously.

16 INDIGENOUS CULTURAL SIGNIFICANCE

There was no formal indigenous heritage survey undertaken during the WWBB22 however, it is recognised that the area has exceptional cultural and spiritual significance to the Noongar people from many tribal groups.

In 2009, a Cultural Heritage Assessment of Nornalup Townsite was prepared in consultation with traditional owners. The Frankland River is known by the Noongar people as *Kwakoorillup river/beela* and is culturally and spiritually significant. It was used traditionally as a camping area near the Walpole-Nornalup Inlet (Guilfoyle, 2009).

The Frankland River is a well-known traditional movement corridor linking the coast with the hinterland and vice versa. Hundreds of traditional place names are recorded for the area, demonstrating the complex patterns of movement and occupation within this area (Guilfoyle, 2009).

"Kwakoorillup river/beela was one of the main travel routes of the Noongar people. As with all river's and waterways, Kwakoorillup was made by Warkel the water snake. At certain times of the year, some of the more inland tribal people from the surrounding Goreng, Koerang and Wilmen groups would follow the river to the Pibulmun- Wadandi Lands by the sea.

The journey along Kwakoorillup's banks was extremely important as it provided the people with all their food & water. It also enabled the people to collect special foods and medicines along the way that could be used for themselves as well as goods for trade to other people whose lands did not yield the different plants that had been collected. It gave the people a chance to continue their roles as caretakers of Noongar Boodjera (Aboriginal Lands), and to undertake any ceremonies or Lore, along their route, such as burning, hunting and the collection of different items for trade at the coastal gatherings.

When Warkel created the route for the river's spirit he made sure it passed through the open lands of the wheatbelt where the special wood for spears and other implements could be collected, the beautiful Jarrah & Karri provided different plants & animals, the granite peaks for lookouts & the quartz outcrops for toolmaking & the spiritual importance of the Tingle Tree's which still have special ceremonial uses & beliefs of the Pibulmun people.

Where the rivers opens into the vast still waters of the inlets, we believe that these places are where warkel lays his eggs which are protected by his whisker's, the native reeds & rushes on the banks of the inlet keep these eggs-(river stones) safe until they are ready to produce new life lines in the form of new creeks & tributary's when they are needed. The water's spirit then moves on out into the ocean where Wardan the sea-spirit welcomes the new life & spreads it out to where it's needed and then when it has run its course it carries the spirits of the river's inhabitants from birds & animals & humans across the ocean to meet Walgin, the rainbow spirit who welcomes everyone & everything to Koorannup the final resting place for all.

Kwakoorillup runs through many different tribal boundaries and still holds special significance of Lore & Custom attached to it. The oral history of the river is still passed onto the next generations of Noongar people and because of this has managed to keep its traditional name after all these years. This shows the continued significance of the river to our people even though it cannot be used entirely the same way as it was due to salinity, property boundaries and impact of European settlement over many years."

(Statement provided by Traditional Owners in Guilfoyle, 2009).

17 PARTICIPATION SURVEY

The post event survey results were very favourable with all respondents indicating that the WWBB22 met and exceeded their expectations as an event. A range of community input from students, general public, academic researchers, private industry, government and land managers participated in the event. As it is the second year of the WWBB event, most participants were repeat visits and heard about it via email or word of mouth.

Of the survey respondents, about 73% rated the quality of presenters highly and 65% event content quality high. Most participants found their knowledge and skills improved after the event , inspiring them to use iNaturalist more, share what they learnt with others, increase their awareness of the biodiversity of the area and help with future events.

Inspiring feedback:

"I had limited knowledge of botany specific to the Walpole area, as well as the diversity of the ecology and associated landforms. I have a more comprehensive understanding of how vegetation is distributed and knowledge of the ecosystem in the Tingle Mosaic."

"A really amazing weekend. Beautiful sense of community and collective effort. Event was superbly run and everyone involved was passionate and generous with their knowledge, time and care."

18 MEDIA

The WWBB22 received excellent media coverage from ABC Great Southern, Walpole Weekly and Farm Weekly. Special thanks to the media for reporting on this fantastic event.

As part of last year's WWBB, Lotterywest funding allowed us to create a short promotional video of the Walpole Wilderness and the WWBB21 which is available for viewing.

19 CONCLUSION

The second Walpole Wilderness BioBlitz has been widely regarded as a great success. The feedback from participants (formally and informally) has been that it was very enjoyable and a positive activity for conservation.

The wonderful news is that WNNPA has been successful in obtaining funding from the Ian Potter Foundation to facilitate and co-ordinate Walpole Wilderness Bioblitz's for 5 years! We are looking forward to seeing you all there again!

The WWBB22 has captured a lot of new scientific data that has greatly increased our understanding of the local environment. This information will be made available for future research and management online through:

- **iNaturalist** (https://www.inaturalist.org/projects/walpole-wilderness-bioblitz-2022)
- **Atlas of Living Australia** (https://www.ala.org.au/)
- **WWBB** website (www.walpolewilderness.org).

As our second event, we have learned a lot about how to run an event of this magnitude. We have identified the strengths and weaknesses of the event and have some goals to work towards, to make the event even better each year. Given the level of enthusiasm in joining in with the WWBB, we saw just how important events like these are for the community. There is a strong desire from the broader community to learn more about the wilderness, to engage with the environment and to take positive actions to protect and conserve it.

There are a lot of people to thank for the enormous amount of work that went into the WWBB. To all of the organisers, WNNPA members, sponsors, volunteers, participants, identifiers, cooks, babysitters and more – the WNNPA committee extend our heartfelt thanks for helping to make this event such a success. Please feel proud of the contribution you have given back to the environment.

"Good science is done by being curious in general, by asking questions all around, by acknowledging the likelihood of being wrong and taking this in good humour for granted, by having a deep fondness for nature, and by being made jumpy and nervous by ignorance."

Lewis Thomas, physician, poet, etymologist, essayist, administrator, educator, policy advisor, and researcher (1913 – 1993)

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21 APPENDICES

APPENDIX 1

Conservation codes for Western Australian flora, fungi, lichen & ecological communities

Threatened flora, fungi and lichen species codes
Schedule 1 - Critically Endangered flora
Schedule 2 - Endangered flora
Schedule 3 - Vulnerable flora
Schedule 4 – Presumed Extinct flora

Priority flora, fungi and lichen species codes
Priority 1: Poorly-known species known from one or a few locations (on threatened lands)
Priority 2: Poorly-known species known from one or a few locations (some on conservation lands)
Priority 3: Poorly-known species known from several locations (some on conservation lands)
Priority 4: Rare, near threatened and other species in need of monitoring

SOURCE: *Wildlife Conservation (Rare Flora) Notice 2018*

WEBSITE: Department of Biodiversity, Conservation and Attractions (DBCA), Parks and Wildlife Service, Western Australia
https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-plants?view=categories&id=108

Flora may also be listed as threatened under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*, *the* Australian Government's central piece of environmental legislation.

Threatened ecological communities

Ecological Community
A naturally occurring biological assemblage that occurs in a particular type of habitat.

A threatened ecological community (TEC) is one which is found to fit into one of the following categories; "presumed totally destroyed", "critically endangered", "endangered" or "vulnerable". Possible threatened ecological communities that do not meet survey criteria are added to DBCA's Priority Ecological Community Lists under Priorities 1, 2 and 3. Ecological Communities that are adequately known, are rare but not threatened, or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.

WEBSITE: Department of Biodiversity, Conservation and Attractions (DBCA), Parks and Wildlife Service, Western Australia
https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/wa-s-threatened-ecological-communities

APPENDIX 2

Flora species observations list

FLORA
Documented on iNaturalist

NO.	SCIENTIFIC NAME	COMMON NAME	FAMILY
1	*Acacia browniana*	Brown's Wattle	Fabaceae
2	*Acacia divergens*	Sail-boat Wattle	Fabaceae
3	*Acacia hastulata*	Prickly Swamp Wattle	Fabaceae
45	*Acacia mooreana*	Sail-boat Wattle	Fabaceae
6	*Acacia pentadenia* subsp. *pentadenia*	Karri Wattle	Fabaceae
7	*Acacia pulchella*	Prickly Moses	Fabaceae
8	*Actinotus glomeratus*		Apiaceae
9	*Actinotus omnifertilis*		Apiaceae
10	*Actinotus repens*		Apiaceae
11	*Adenanthos obovatus*	Basket Bush	Proteaceae
12	*Agonis flexuosa*	Western Australian Peppermint	Myrtaceae
13	*Agonis theiformis*		Myrtaceae
14	*Agrostocrinum species*	Blue Grass Llily	Hemerocallidaceae
15	*Aira caryophyllea**	Silver Hairgrass*	Poaceae
16	*Allocasuarina decussata*	Karri Sheoak	Casuarinaceae
17	*Allocasuarina fraseriana*	Western Sheoak	Casuarinaceae
18	*Amperea simulans*		Euphorbiaceae
19	*Amphipogon debilis*		Poaceae
20	*Anarthria prolifera*		Anarthriaceae
21	*Anarthria scabra*		Anarthriaceae
22	*Anarthria species*	Rush	Anarthriaceae
23	*Andersonia ?auriculata*		Ericaceae
24	*Andersonia caerulea*	Foxtails	Ericaceae
25	*Anigozanthos flavidus*	Tall Kangaroo Paw	Haemodoraceae
26	*Aotus species*		Fabaceae
27	*Aphelia cyperoides*		Centrolepidaceae
28	*Asplenium aethiopicum*	Ethiopian spleenwort	Aspleniaceae
29	*Banksia grandis*	Giant Banksia	Proteaceae
30	*Banksia ilicifolia*	Holly-Leaved Banksia	Proteaceae
31	*Baxteria australis*		Dasypogonaceae
32	*Billardiera variifolia*		Pittosporaceae
33	*Boronia crenulata*	Aniseed Boronia	Rutaceae
34	*Boronia gracilipes*	Karri Boronia	Rutaceae
35	*Boronia spathulata*		Rutaceae
36	*Boronia stricta*		Rutaceae
37	*Bossiaea praetermissa*		Fabaceae
38	*Bossiaea webbii*		Fabaceae
39	*Bryopsida* Priority 3 Ecological Community	Leafy Liverworts (on karri wattle)	Lejeuneaceae
40	*Bryum argenteum*		Bryaceae
41	*Burchardia congesta*	Milkmaids	Colchicaceae
42	*Burchardia multiflora*	Dwarf Burchardia	Colchicaceae
43	*Caesia species*	Grass Lily	Hemerocallidaceae

FLORA
Documented on iNaturalist

NO.	SCIENTIFIC NAME	COMMON NAME	FAMILY
44	*Caladenia brownii*	Karri Spider Orchid	Orchidaceae
45	*Caladenia flava*	Cowslip Orchid	Orchidaceae
46	*Caladenia latifolia*	Pink Fairies	Orchidaceae
47	*Caleana nigrita*	Flying Duck Orchid	Orchidaceae
48	*Calochilus uliginosus*	Swamp Beard Orchid	Orchidaceae
49	*Calymperastrum latifolium* Priority 2	Djiriji Moss	Pottiaceae
50	*Campylopus bicolor*	Campylopus bicolor	Dicranaceae
51	*Campylopus clavatus*	Campylopus clavatus	Dicranaceae
52	*Campylopus introflexus*		Dicranaceae
53	*Campylopus kirkii*		Dicranaceae
54	*Campylopus pyriformis*	Dwarf Swan-neck Moss	Dicranaceae
55	*Cassytha glabella*	Slender Devil's Twine	Lauraceae
56	*Cassytha racemosa*	Doddder laurel	Lauraceae
57	*Centrolepis aristata*	Pointed Centrolepis	Centrolepidaceae
58	*Centrolepis drummondiana*		Centrolepidaceae
59	*Cephalotus follicularis*	Albany Pitcher Plant	Cephalotaceae
60	*Cephaloziella exiliflora*	Leafy Liverworts	Cephaloziellaceae
61	*Cephaloziella species*	Leafy Liverworts	Cephaloziellaceae
62	*Ceramanus clatritexta*	Leafy Liverworts	Lepidoziaceae
63	*Ceratodon purpureus*	Redshank	Ditrichaceae
64	*Chaetospora curvifolia* (formerly *Schoenus curvifolius*)		Cyperaceae
65	*Chamaescilla corymbosa*	Blue Stars	Hemerocallidaceae
66	*Chara species*	Muskgrass	Characeae
67	*Cheilanthes austrotenuifolia*	Rock Fern	Pteridaceae
68	*Chiloscyphus species*	A Liverwort	Lophocoleaceae
69	*Chlorophyta*	Green Algae	Phylum Chlorophyta
70	*Chorilaena quercifolia*	Karri Oak	Rutaceae
71	*Chorizandra cymbaria*	Heron Bristle-Rush	Cyperaceae
72	*Chorizema ilicifolium*	Holly flame pea	Fabaceae
73	*Chorizema retrorsum*		Fabaceae
74	*Chorizema rhombeum*	Scarlet Flame Pea	Fabaceae
75	*Cicendia filiformis**	Yellow Centaury*	Gentianaceae
76	*Clematis pubescens*	Old Man's Beard	Ranunculaceae
77	*Comesperma calymega*	Blue Spike Milkwort	Polygalaceae
78	*Comesperma flavum*		Polygalaceae
79	*Comesperma virgatum*		Polygalaceae
80	*Conospermum flexuosum*	Tangled Smokebush	Proteaceae
81	*Conostylis serrulata*	Cottonhead	Haemodoraceae
82	*Conostylis setigera*	Bristly Cottonhead	Haemodoraceae
83	*Corybas abditus*	Swamp Helmet Orchid	Orchidaceae
84	*Corybas recurvus*	Western Helmet Orchid	Orchidaceae
85	*Corymbia calophylla*	Marri	Myrtaceae
86	*Cosmelia rubra*		Ericaceae
87	*Cotula australis*	Common Cotula	Asteraceae
88	*Crassula species*	Stonecrops	Crassulaceae
89	*Crowea angustifolia*	Waxflower	Rutaceae
90	*Cyanicula sericea*	Silky Blue Orchid	Orchidaceae

FLORA
Documented on iNaturalist

NO.	SCIENTIFIC NAME	COMMON NAME	FAMILY
91	*Cyrtostylis huegelii*		Orchidaceae
92	*Dampiera alata*	Winged-Stem Dampiera	Goodeniaceae
93	*Dampiera hederacea*	Karri Dampiera	Goodeniaceae
94	*Dampiera leptoclada*	Slender-shooted Dampiera	Goodeniaceae
95	*Dampiera pedunculata*		Goodeniaceae
96	*Dampiera trigona*		Goodeniaceae
97	*Dasypogon bromeliifolius*	Drumsticks	Dasypogonaceae
98	*Daucus glochidiatus*	Australian Carrot	Apiaceae
99	*Desmocladus fasciculatus*		Restionaceae
100	*Dielsiodoxa lycopodioides*		Ericaceae
101	*Ditrichum difficile*		Ditrichaceae
102	*Diuris jonesii*	Dunsborough Donkey Orchid	Orchidaceae
103	*Dodonaea ceratocarpa*	A Hop bush	Sapindaceae
104	*Drakaea glyptodon*	King-in-his-carriage	Orchidaceae
105	*Drakaea livida*	Warty Hammer Orchid	Orchidaceae
106	*Drosera drummondii*		Droseraceae
107	*Drosera erythrogyne*		Droseraceae
108	*Drosera glanduligera*	Pimpernel Sundew	Droseraceae
109	*Drosera hamiltonii*	Rosy Sundew	Droseraceae
110	*Drosera modesta*	Modest Rainbow	Droseraceae
111	*Drosera pulchella*	Pretty Sundew	Droseraceae
112	*Drosera sulphurea*	Sulphur-flowered Sundew	Droseraceae
113	*Eccremidium pulchellum*		Ditrichaceae
114	*Empodisma gracillimum*		Restionaceae
115	*Entosthodon species*	Mosses	Funariaceae
116	*Eremosyne pectinata*		Eremosynaceae
117	*Eriochilus species*	Bunny Orchids	Orchidaceae
118	*Eucalyptus brevistylis*	Rate's Tingle	Myrtaceae
119	*Eucalyptus diversicolor*	Karri	Myrtaceae
120	*Eucalyptus guilfoylei*	Yellow Tingle	Myrtaceae
121	*Eucalyptus jacksonii*	Red Tingle	Myrtaceae
122	*Eucalyptus marginata*	Jarrah	Myrtaceae
123	*Eucalyptus marginata marginata*	Jarrah	Myrtaceae
124	*Eucalyptus megacarpa*	Bullich	Myrtaceae
125	*Eucalyptus patens*	Yarri	Myrtaceae
126	*Eutaxia epacridoides*		Fabaceae
127	*Eutaxia myrtifolia*	Egg and Bacon Plant	Fabaceae
128	*Evandra aristata*		Cyperaceae
129	*Fissidens species*	Pocket Mosses	Fissidentaceae
130	*Fissidens taylorii*	Pocket Mosses	Fissidentaceae
131	*Fossombronia species*	Frillworts	Fossombroniaceae
132	*Funaria hygrometrica*	Bonfire Moss	Funariaceae
133	*Gahnia decomposita*	Saw Sedge	Cyperaceae
134	*Gastrodia lacista*	Western Potato Orchid	Orchidaceae
135	*Gastrolobium cuneatum*		Fabaceae
136	*Glischrocaryon racemosum*	Shrubby Raspwort	Haloragaceae
137	*Goebelobryum grossitextum*	Leafy Liverworts	Acrobolbaceae

FLORA
Documented on iNaturalist

NO.	SCIENTIFIC NAME	COMMON NAME	FAMILY
138	*Goebelobryum unguiculatum*	Leafy Liverworts	Acrobolbaceae
139	*Gompholobium confertum*		Fabaceae
140	*Gompholobium polymorphum*	Twining Gompholobium	Fabaceae
141	*Goodenia eatoniana*		Goodeniaceae
142	*Goodenia trinervis*	Common Velleia	Goodeniaceae
143	*Gratiola pubescens*	Hairy Brooklime	Plantaginaceae
144	*Grevillea trifida*		Proteaceae
145	*Haemodorum spicatum*	Bloodroot	Haemodoraceae
146	*Hakea amplexicaulis*	Prickly Hakea	Proteaceae
147	*Hakea ceratophylla*	Staghorn Hakea/Horned-leaf Hakea	Proteaceae
148	*Hakea florida*	Summer Snow	Proteaceae
149	*Hedwigia ciliata*	Ciliate Hoarmoss	Hedwigiaceae
150	*Hemigenia incana*	Silky Hemigenia	Lamiaceae
151	*Hibbertia amplexicaulis*		Dilleniaceae
152	*Hibbertia cuneiformis*	Cutleaf Hibbertia	Dilleniaceae
153	*Hibbertia cunninghamii*	Guinea-flowers	Dilleniaceae
154	*Hibbertia furfuracea*	Guinea-flowers	Dilleniaceae
155	*Hibbertia perfoliata*	Guinea-flowers	Dilleniaceae
156	*Hibbertia pilosa*	Guinea-flowers	Dilleniaceae
157	*Histiopteris incisa**	Water Fern*	Dennstaedtiaceae
158	*Homalospermum firmum*		Myrtaceae
159	*Hovea chorizemifolia*	Holly-Leaved Hovea	Fabaceae
160	*Hovea elliptica*	Tree Hovea	Fabaceae
161	*Hydrocotyle alata*		Araliaceae
162	*Hydrocotyle callicarpa*	Tiny Pennywort	Araliaceae
163	*Hydrocotyle scutellifera*		Araliaceae
164	*Hypocalymma angustifolium*	White Myrtle	Myrtaceae
165	*Hypocalymma cordifolium*		Myrtaceae
166	*Hypochaeris radicata**	Flatweed*	Asteraceae
167	*Hypolaena exsulca*		Restionaceae
168	*Isolepis marginata* (syn. *Ficinia marginta)*	Common Annual Clubrush	Cyperaceae
169	*Isopogon ?longifolius*	Conesticks	Proteaceae
170	*Isotropis cuneifolia cuneifolia*	Granny Bonnets	Fabaceae
171	*Johnsonia lupulina*	Hooded Lily	Hemerocallidaceae
172	*Juncus planifolius*		Juncaceae
173	*Kennedia coccinea*	Coral Vine	Fabaceae
174	*Kingia australis*	Bullanock	Dasypogonaceae
175	*Kunzea sulphurea*	Sulphur-flowered Kunzea	Myrtaceae
176	*Kurzia compacta*	Leafy Liverworts	Lepidoziaceae
177	*Lagenophora huegelii*	Coarse Bottle-Daisy	Asteraceae
178	*Lasiopetalum floribundum*		Malvaceae
179	*Lejeuneaceae*	Porellales	
180	*Lepidosperma effusum*	Riverside Sword-Sedge	Cyperaceae
181	*Lepidosperma gracile*		Cyperaceae
182	*Lepidosperma ?squamatum/ pubisquameum*		Cyperaceae
183	*Lepidosperma tetraquetrum*		Cyperaceae

FLORA
Documented on iNaturalist

NO.	SCIENTIFIC NAME	COMMON NAME	FAMILY
183	*Leptoceras menziesii*	Rabbit Orchid	Orchidaceae
184	*Leptoceras species*		Restionaceae
185	*Leptomeria scrobiculata*		Santalaceae
186	*Lethocolea pansa*	Leafy Liverworts	Acrobolbaceae
187	*Leucobryum glaucum*	Pincushion Moss	Leucobryaceae/Dicranaceae
188	*Leucobryum subchlorophyllosum*	Mosses	Leucobryaceae/Dicranaceae
189	*Leucopogon australis*	Spike Beard-heath	Ericaceae
190	*Leucopogon capitellatus*	Beard-heaths	Ericaceae
191	*Leucopogon gracilis*	Beard-heath	Ericaceae
192	*Leucopogon verticillatus*	Tassel Flower	Ericaceae
193	*Levenhookia pusilla*	Tiny Stylewort	Stylidiaceae
194	*Lindsaea linearis*	Screw Fern	Lindsaeaceae
195	*Lobelia rhombifolia*		Campanulaceae
196	*Lomandra caespitosa*	Tufted Mat Rush	Asparagaceae
197	*Lomandra drummondii*		Asparagaceae
198	*Lomandra effusa*	Scented Mat-rush	Asparagaceae
199	*Lomandra nigricans*		Asparagaceae
200	*Lomandra pauciflora*		Asparagaceae
201	*Lomandra sericea*	Silky Mat Rush	Asparagaceae
202	*Lomandra sonderi*		Asparagaceae
203	*Lophocolea semiteres* (formerly *Chiloscyphus semiteres*)	Southern Crestwort	Lophocoleaceae
204	*Loxocarya cinerea*	Chinese Puzzle	Restionaceae
205	*Lyginia species*		Restionaceae
206	*?Machaerina juncea*	Bare Twig Rush	Cyperaceae
207	*Macrozamia riedlei*	Zamia Palm	Zamiaceae
208	*Marchantia berteroana*	Bonfire Liverwort	Marchantiaceae
209	*?Marianthus species*		Pittosporaceae
210	*Melaleuca sparsa*	Swamp Bottlebrush	Myrtaceae
211	*Melaleuca thymoides*	Sand Wattle Myrtle	Myrtaceae
212	*Melaleuca transversa*	Gravel Bottlebrush	Myrtaceae
213	*Mesomelaena graciliceps*		Cyperaceae
214	*Mesomelaena tetragona*	Semaphore Sedge	Cyperaceae
215	*Microlaena stipoides*	Weeping Rice Grass	Poaceae
216	*Microtis species*	Onion Orchids	Orchidaceae
217	*Mirbelia dilatata*	Holly-leaved Mirbelia	Fabaceae
218	*Monotaxis occidentalis*		Euphobiaceae
219	*Netrostylis*		Cyperaceae
220	*Neurachne species*		Poaceae
221	*Olax phyllanthi*		Olacaceae
222	*Olearia paucidentata*	Autumn Scrub Daisy	Asteraceae
223	*Opercularia hispidula*	Dogweed/Stinkweed (native)	Rubiaceae
224	*Opercularia volubilis*	Twining Stinkweed (native)	Rubiaceae
225	*Orianthera serpyllifolia*		Loganiaceae
226	*Orianthera serpyllifolia serpyllifolia*		Loganiaceae
227	*Orthodontium lineare*	Cape Thread-moss	Orthodontiaceae

FLORA
Documented on iNaturalist

NO.	SCIENTIFIC NAME	COMMON NAME	FAMILY
228	*Paracromastigum longiscyphum*		Lepidoziaceae
229	*Patersonia babianoides*		Iridaceae
230	*Patersonia occidentalis*	Purple Flag	Iridaceae
231	*Patersonia umbrosa umbrosa*	Purple Flag	Iridaceae
232	*Pentapeltis silvatica*		Apiaceae
233	*Persoonia longifolia*	Snottygobble	Proteaceae
234	*Petrophile diversifolia*	Pixie Mops	Proteaceae
235	*Phaeoceros species*	A Hornwort	Notothyladaceae
236	*Philydrella species*		Philydraceae
237	*Phlebocarya ciliata*		Haemodoraceae
238	*Phyllangium paradoxum*	Wiry Mitrewort	Loganiaceae
239	*Phylloglossum drummondii*	Pygmy Clubmoss	Lycopodiaceae
240	*Pigea debilissima*	A native violet	Violaceae
241	*Pimelea angustifolia*	Narrow-Leaved Pimelea	Thymelaeaceae
242	*Pimelea hispida*	Bristly Pimelea	Thymelaeaceae
243	*Pimelea longiflora*		Thymelaeaceae
244	*Pimelea spectabilis*	Bunjong	Thymelaeaceae
245	*Pithocarpa ramosa*		Asteraceae
246	*Platysace pendula*		Apiaceae
247	*Pleurophascum occidentale* ***Priority 4***	Western Giant-leaved Moss	Pleurophascaceae
248	*Prasophyllum fimbria*	Fringed Leek Orchid	Orchidaceae
249	*Prasophyllum regium*	King Leek Orchid	Orchidaceae
250	*Pteridium esculentum*	Austral Bracken	Pterdiaceae
251	*Pterostylis ?karri*	Karri Snail Orchid	Orchidaceae
252	*Pterostylis ?nana*	Greenhoods	Orchidaceae
253	*Pterostylis barbata*	Bird Orchid	Orchidaceae
254	*Pterostylis crispula*	Greenhoods	Orchidaceae
255	*Pterostylis karri*	Karri Snail Orchid	Orchidaceae
256	*Pterostylis setulosa*	Hairy-stemmed Snail Orchid	Orchidaceae
257	*Pterostylis turfosa*	Bearded Bird Orchid	Orchidaceae
258	*Pultenaea reticulata*		Fabaceae
259	*Pyrorchis forrestii*	Pink Beaks	Orchidaceae
260	*Pyrorchis nigricans*	Red Beaks	Orchidaceae
261	*Racopilum cuspidigerum*	Mosses	Racopilaceae
262	*Reedia spatahacea* **Endangered (WA) & Critically Endangered (national)**		
263	*Rhaphidorrhynchium amoenum*	Mosses	Sematophyllaceae
264	*Riccardia species*	Leafy Liverworts	Aneuraceae
265	*Rosulabryum billardierei*	Mosses	Bryaceae
266	*Rosulabryum campylothecium*	Mosses	Bryaceae
267	*Rytidosperma species*		Poaceae
268	*Scaevola filifolia*	Thread-leaved Diaspasis	Goodeniaceae
269	*Scaevola microphylla*	Scaevola microphylla	Goodeniaceae
270	*Scaevola striata*	Royal Robe	Goodeniaceae
271	*Schoenus ?efoliatus*	Bogrushes	Cyperaceae
272	*Schoenus ?multiglumis*	Bogrushes	Cyperaceae

FLORA
Documented on iNaturalist

NO.	SCIENTIFIC NAME	COMMON NAME	FAMILY
273	*Sematophyllum homomallum*	Bronze Moss	Sematophyllaceae
274	*Senecio species*		Asteraceae
275	*Siloxerus multiflorus*	Small Wrinklewort	Asteraceae
276	*Sphaerolobium alatum*		Fabaceae
277	*Sphaerolobium grandiflorum*		Fabaceae
278	*Sphaerolobium nudiflorum*		Fabaceae
279	*Sphaerolobium rostratum*		Fabaceae
280	*Sphaeropteris cooperi* * (formerly *Cyathea cooperi*)	Rough Tree Fern*	Cyatheaceae
281	*Sphenotoma gracilis*		Ericaceae
282	*Stackhousia monogyna*	Creamy Candles	Celastraceae
283	*Strangea stenocarpoides*		Proteaceae
284	*Stylidium acuminatum*		Stylidiaceae
285	*Stylidium acuminatum meridionale*		Stylidiaceae
286	*Stylidium amoenum*	Lovely Triggerplant	Stylidiaceae
287	*Stylidium calcaratum*	Book Triggerplant	Stylidiaceae
288	*Stylidium piliferum*	Common Butterfly Triggerplant	Stylidiaceae
289	*Stylidium pygmaeum*	Pygmy Triggerplant	Stylidiaceae
290	*Stylidium repens*	Matted Triggerplant	Stylidiaceae
291	*Stylidium rhynchocarpum*	Black-beaked Triggerplant	Stylidiaceae
292	*Stylidium scandens*	Climbing Triggerplant	Stylidiaceae
293	*Stylidium schoenoides*	Cow Kicks	Stylidiaceae
294	*Stypandra glauca*	Nodding Blue Lily	Hemerocallidaceae
295	*Styphelia propinqua*		Ericaceae
296	*Symphyogyna podophylla*	Leafy Liverworts	Pallaviciniaceae
297	*Taraxis grossa*		Restionaceae
298	*Taxandria fragrans*		Myrtaceae
299	*Taxandria juniperina*	Juniper Myrtle/Wattie	Myrtaceae
300	*Taxandria linearifolia*		Myrtaceae
301	*Taxandria parviceps*	Fine Tea Tree	Myrtaceae
302	*Tayloria octoblepharum*	Austral Poop Moss	Splachnaceae
303	*Tetrarrhena laevis*	Forest Rice Grass	Poaceae
304	*Tetratheca filiformis*		Elaeocarpaceae
305	*Tetratheca hispidissima*		Elaeocarpaceae
306	*Thelymitra antennifera*	Lemon-scented Sun Orchid	Orchidaceae
307	*Thelymitra flexuosa*	Twisted Sun-Orchid	Orchidaceae
308	*Thelymitra graminea*	Shy Sun Orchid	Orchidaceae
309	*Thelymitra paludosa*	Plain Sun Orchid	Orchidaceae
310	*Thomasia paniculata*	Thomasia paniculata	Malvaceae
311	*Thomasia sp. Vasse*		Malvaceae
312	*Thysanotus thyrsoideus*	Fringe lily	Asparagaceae
313	*Trachymene grandis*		Araliaceae
314	*Trachymene pilosa*	Native Parsnip	Araliaceae
315	*Tremandra diffusa*		Elaeocarpaceae
316	*Tremandra stelligera*		Elaeocarpaceae
317	*Tricoryne humilis*		Hemerocallidaceae
318	*Triquetrella paradoxa* (formerly *Leptodontium paradoxum*)	Mosses	Pottiaceae

FLORA Documented on iNaturalist			
NO.	**SCIENTIFIC NAME**	**COMMON NAME**	**FAMILY**
319	*Triquetrella paradoxa* (formerly *Leptodontium paradoxum*)	Mosses	Pottiaceae
320	*Trymalium odoratissimum*	Karri Hazel	Rhamnaceae
321	*Utricularia multifida*	Pink Petticoats	Lentibulariaceae
322	*Utricularia paulineae*		Lentibulariaceae
323	*Utricularia simplex*	Blue Coats	Lentibulariaceae
324	*Utricularia tenella*	Pink Bladderwort	Lentibulariaceae
325	*Weissia controversa*		Pottiaceae
326	*Xanthorrhoea preissii*	Balga	Xanthorrhoeaceae
327	*Xanthosia candida*	Xanthosia candida	Apiaceae
328	*Xanthosia huegelii*	Heath Xanthosia	Apiaceae
329	*Xanthosia rotundifolia*	Southern Cross	Apiaceae
330	*Xanthosia tasmanica*	Xanthosia tasmanica	Apiaceae
331	*Xyris ?lanata*	Yellow-eyed grasses	Xyridaceae
332	*Zoopsis ?argentea*	Leafy Liverworts	Lepidoziaceae

FUNGI Documented on iNaturalist		
NO.	**COMMON NAME**	**SCIENTIFIC NAME**
1		*Aecidium eburneum*
2	Common Gilled Mushrooms and Allies	Agaricales
3	Agaricomycetes	Agaricomycetes
4	Aleurina ferruginea	*Aleurina ferruginea*
5	Amanita	Amanita
6	Australian Pineapple Lepidella	*Amanita ananiceps*
7	Vermilion Amanita	*Amanita xanthocephala*
8	Anthracophyllum	Anthracophyllum
9	Anthracophyllum archeri	*Anthracophyllum archeri*
10	Ascomycete Fungi	Ascomycota
11	Bankeraceae	Bankeraceae
12	Basidiomycete Fungi	Basidiomycota
13	Boletes	Boletaceae
14	Boletes and Allies	Boletales
15		Boletellus
16	Button lichens	Buellia
17	Common Cladia	*Cladia aggregata*
18	Cladia schizopora	*Cladia schizopora*
19	Pixie Cup Lichens	Cladonia
20		*Cladonia rigida*
21	Dragon Horn	*Cladonia squamosa*
22	spindles and structured lichens	Cladoniaceae
23	Funnels	Clitocybe
24	Coltricia	Coltricia
25	Coltriciaceae	Coltriciaceae
26	Coltriciella dependens	*Coltriciella dependens*
27		Cortinariaceae
28	Webcaps (Cortinarius sect. Cortinarius)	Cortinarius
29		*Cortinarius basirubescens*
30		*Cortinarius clelandii*
31		*Cortinarius erythrocephalus*
32	Cortinarius kula	*Cortinarius kula*
33	Elegant Blue Webcap	*Cortinarius rotundisporus*
34	Daldinia concentrica group	*Daldinia concentrica*
35	Dung-loving Deconica	*Deconica coprophila*
36		Descomyces
37	Pinkgills	Entoloma
38	Exidia	Exidia
39	Mustard Yellow Polypore	*Fuscoporia gilva*

FUNGI
Documented on iNaturalist

NO.	COMMON NAME	SCIENTIFIC NAME
40	Moss Bells	Galerina
41	Artist's Brackets, Reishi, and Allies	Ganoderma
42	Southern Bracket	*Ganoderma australe*
43	Earthstars	Geastrum
44	Common Script Lichen	Graphis scripta
45	Rustgills and Gyms	Gymnopilus
46	*Gymnopilus allantopus*	*Gymnopilus allantopus*
47	Hedgehog mushrooms	Hydnum
48		*Hydnum crocidens*
49	Hygrocybe polychroma	*Hygrocybe polychroma*
50	Hymenochaetaceae	Hymenochaetaceae
51	Hymenochaetales	Hymenochaetales
52	Bolete Mould	*Hypomyces chrysospermus*
53		Hypoxylon
54		Hysterangium
55	Fiber Caps	Inocybe
56	laccarias	Laccaria
57	Common Milkcaps	Lactarius
58	*Lactarius eucalypti*	*Lactarius eucalypti*
59	White Punk	*Laetiporus portentosus*
60	Common Lichens	Lecanoromycetes
61	Tile Lichens	Lecidea
62	Lichenomphalia subg. Lichenomphalia	Lichenomphalia
63	Yellow Navel	*Lichenomphalia chromacea*
64	Marasmiineae	Marasmiineae
65	icicle spine	*Mucronella pendula*
66	Mycena sp	Mycena
67	Bonnets	*Mycena carmeliana*
68	Panellus ligulatus	*Panellus ligulatus*
69	Parmelioideae	Parmelioideae
70	Pezizas, Desert Truffles, and Allies	Pezizaceae
71	Pezizales	Pezizales
72	Operculate Ascomycetes	Pezizomycetes
73	Higher Ascomycetes	Pezizomycotina
74		Phellinus
75	Phellorinia	Phellorinia
76		*Pholiota brunnescens*
77	Curry Punk	*Piptoporus australiensis*
78		Pisolithus
79	Bracket Fungi	Polyporaceae
80	Shelf Fungi	Polyporales
81		Porotheleaceae
82	Dung Roundhead	*Protostropharia semiglobata*
83	Psathyrella sect. Psathyrella	Psathyrella
84		Rhodocybe
85	Orange Moss Agaric	*Rickenella fibula*
86	Milkcaps, Brittlegills and Allies	Russulaceae

FUNGI
Documented on iNaturalist

NO.	COMMON NAME	SCIENTIFIC NAME
87	Sarcosomataceae	Sarcosomataceae
88	Eyelash cups	Scutellinia
89	Stereum	Stereum
90	Hairy Curtain Crust	*Stereum hirsutum*
91	Strophariaceae	Strophariaceae
92	Trametes	Trametes
93	Southern Cinnabar Polypore	*Trametes coccinea*
94	Jelly Fungus	Tremella
95		*Tremellomycetes*
96		*Tubaria rufofulva*
97	Urnula	Urnula
98	Bristly Beard Lichen	Usnea hirta
99		Xerula
100		Xylaria
101		Zelleromyces

Threatened fauna species codes
Schedule 1 - Critically Endangered fauna
Schedule 2 - Endangered fauna
Schedule 3 - Vulnerable fauna
Schedule 4 - Presumed Extinct fauna
Schedule 5 - Migratory birds protected under an international agreement
Schedule 6 – Conservation Dependent fauna
Schedule 7 - Other Specially Protected fauna

Priority fauna species codes
Priority 1: Poorly-known species known from one or a few locations (on threatened lands)
Priority 2: Poorly-known species known from one or a few locations (some on conservation lands)
Priority 3: Poorly-known species known from several locations (some on conservation lands)
Priority 4: Rare, near threatened and other species in need of monitoring

SOURCE:
Wildlife Conservation (Specially Protected Fauna) Notice 2018

WEBSITE:
Department of Biodiversity, Conservation and Attractions (DBCA), Parks And Wildlife Service, Western Australia

https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-animals?view=categories&id=109

Fauna may also be listed as threatened under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the Australian Government's central piece of environmental legislation.

BIRDLIFE WA

Bird Species List of Walpole Wilderness Bioblitz 2022 Area

NO.	COMMON NAME	SCIENTIFIC NAME
1	Australian Magpie	*Gymnorhina tibicen*
2	Australian Raven	*Corvus coronoides*
3	Australian Ringneck	*Barnardius zonarius*
4	Baudin's Black-Cockatoo **ENDANGERED**	*Zanda baudinii*
5	Black-faced Cuckoo-shrike	*Coracina novaehollandiae*
6	Common Bronzewing	*Phaps chalcoptera*
7	Crested Shrike-tit	*Falcunculus frontatus*
8	Dusky Woodswallow	*Artamus cyanopterus*
9	Fairy-wren spp	*Malurus species*
10	Fan-tailed Cuckoo	*Cacomantis flabelliformis*
11	Golden Whistler	*Pachycephala pectoralis*
12	Grey Currawong	*Strepera versicolor*
13	Grey Fantail	*Rhipidura fuliginosa*
14	Grey Shrike-thrush	*Colluricincla harmonica*
15	Inland Thornbill	*Acanthiza apicalis*
16	New Holland Honeyeater	*Phylidonyris novaehollandiae*
17	Purple-crowned Lorikeet	*Glossopsitta porphyrocephala*
18	Red Wattlebird	*Anthochaera carunculata*
19	Red-eared Firetail	*Stagonopleura oculata*
20	Forest Red-tailed Black-Cockatoo **VULNERABLE**	*Calyptorhynchus banksii naso*
21	Rufous Treecreeper	*Climacteris rufus*
22	Rufous Whistler	*Pachycephala rufiventris*
23	Shining Bronze-Cuckoo	*Chalcites lucidus*
24	Silvereye	*Zosterops lateralis*
25	Splendid Fairy-wren	*Malurus splendens*
26	Spotted Pardalote	*Pardalotus punctatus*
27	Striated Pardalote	*Pardalotus striatus*
28	Swamp Harrier	*Circus approximans*
29	Varied Sittella	*Daphoenositta chrysoptera*
30	Western Gerygone	*Gerygone fusca*
31	Western Rosella	*Platycercus icterotis*
32	Western Spinebill	*Acanthorhynchus superciliosus*
33	White-breasted Robin	*Quoyornis georgianus*
34	White-browed Babbler	*Pomatostomus superciliosus*
35	White-browed Scrubwren	*Sericornis frontalis*
36	White-naped Honeyeater	*Melithreptus lunatus*
37	Willie Wagtail	*Rhipidura leucophrys*

Adapted from Walpole Wilderness Bioblitz 2022 Birdlife WA Birds report: Appendix I – Bird list (Bioblitz)
Total 37 bird species were found with three bird's survey sessions covering four locations within the Walpole Wilderness Bioblitz area.

BIRDLIFE WA

Additional Bird Species List within 10km radius of Walpole Wilderness Bioblitz 2022 Area

NO.	COMMON NAME	SCIENTIFIC NAME
1	Australasian Swamphen	*Porphyrio melanotus*
2	Australian Pelican	*Pelecanus conspicillatus*
3	Australian Shelduck	*Tadorna tadornoides*
4	Australian Wood Duck	*Chenonetta jubata*
5	Brown Goshawk / Collared Sparrowhawk[a]	*Accipiter fasciatus/Accipiter cirrocephalus*
6	Brown Honeyeater	*Lichmera indistincta*
7	Caspian Tern **MIGRATORY SPECIES**	*Hydroprogne caspia*
8	Emu	*Dromaius novaehollandiae*
9	Galah	*Cacatua pastinator*
10	Great Cormorant	*Phalacrocorax carbo*
11	Laughing Kookaburra	*Dacelo novaeguineae*
12	Little Eagle (Light Morph)[a]	*Hieraaetus morphnoides*
13	Osprey	*Pandion haliaetus*
14	Pacific Black Duck	*Anas superciliosa*
15	Pacific Gull	*Larus pacificus*
16	Red-winged Fairywren[a]	*Malurus elegans*
17	Scarlet Robin[a]	*Petroica multicolor*
18	Silver Gull	*Chroicocephalus novaehollandiae*
19	Southern Boobook	*Ninox boobook*
20	Square-tailed Kite[a]	*Lophoictinia isura*
21	Tawny Frogmouth	*Podargus strigoides*
22	Tree Martin	*Petrochelidon nigricans*
23	Welcome Swallow	*Hirundo neoxena*
24	White-faced Heron	*Egretta novaehollandiae*
25	Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*

Adapted from Walpole Wilderness Bioblitz 2022 Birdlife WA Birds report:
Appendix IV - Bird List (Additional)
[a] Covered the same Bioblitz's bird survey locations from 29 Sep 10:30 to 30 Sep 12:00
Other sightings (survey and incidental) from 28 Sep 16:00 to 4 Oct 08:00

WALPOLE WILDERNESS BIOBLITZ 2022: BIRD SPECIES LIST

Documented on iNaturalist & community survey observations

NO.	COMMON NAME	SCIENTIFIC NAME
1	Australian Owlet-nightjar	*Aegotheles cristatus*
2	Australian Raven	*Corvus coronoides*
3	Black-faced Cuckooshrike	*Coracina novaehollandiae*
4	Grey Currawong	*Strepera versicolor*
5	Laughing Kookaburra	*Dacelo novaeguineae*
6	New Holland Honeyeater	*Phylidonyris novaehollandiae*
7	Painted Buttonquail	*Turnix varius*
8	Red-eared Firetail	*Stagonopleura oculata*
9	Red-winged Fairywren	*Malurus elegans*
10	Silvereye	*Zosterops lateralis*
11	Southern Boobook	*Ninox boobook*
12	Tawny Frogmouth	*Podargus strigoides*
13	Western Rosella	*Platycercus icterotis*
14	Western Wattlebird	*Anthochaera lunulata*
15	White-breasted Robin	*Eopsaltria georgiana*
16	White-browed Scrubwren	*Sericornis frontalis*

APPENDIX 6
Mammal species observations list

NATIVE MAMMAL SPECIES OBSERVATIONS LIST
Documented on iNaturalist & known to occur in the
Walpole Wilderness Bioblitz 2022 area

NO.	COMMON NAME	SCIENTIFIC NAME	FAMILY
1	Australian Bush Rat	*Rattus fuscipes*	Muridae
2	Chocolate Wattled Bat	*Chalinolobus morio*	Vespertilionidae
3	Common Brushtail Possum	*Trichosurus vulpecula*	Phalangeridae
4	Quenda/Southwestern Brown Bandicoot **PRIORITY 4**	*Isoodon obesulus subsp. fusciventer*	Peramelidae
5	Quokka **VULNERABLE**	*Setonix brachyurus*	Macropodidae
6	Short-beaked Echidna	*Tachyglossus aculeatus*	Tachyglossidae
7	Southern Forest Bat	*Vespadelus regulus*	Vespertilionidae
8	Western Brush Wallaby/Black-gloved Wallaby **PRIORITY 4**	*Macropus irma*	Macropodidae
9	Western False Pipistrelle	*Falsistrellus mackenziei*	Vespertilionidae
10	Western Grey Kangaroo	*Macropus fuliginosus*	Macropodidae
11	White Striped Mastiff bat	*Tadarida australis*	Molossidae
12	Yellow-footed Antechinus/Mardo	*Antechinus flavipes*	Dasyuridae

INTRODUCED MAMMAL SPECIES OBSERVATIONS LIST
Documented on iNaturalist

NO.	COMMON NAME	SCIENTIFIC NAME	FAMILY
1	Cat	*Felis catus*	Felidae
2	Red Fox	*Vulpes vulpes*	Canidae

APPENDIX 7
Reptile species observations list

REPTILE SPECIES OBSERVATIONS LIST
Documented on iNaturalist

NO.	COMMON NAME	SCIENTIFIC NAME	FAMILY
1	Western Three-lined Skink	*Acritoscincus trilineatus*	Scincidae
2	Dugite	*Pseudonaja affinis*	Elapidae
3	Common South-west Ctenotus	*Ctenotus labillardieri*	Scincidae

APPENDIX 8
Amphibian species observations list

AMPHIBIANS SPECIES OBSERVATIONS LIST Documented on iNaturalist		
NO.	**COMMON NAME**	**SPECIES NAME**
1	Geocrinia	*Geocrinia species*
2	Motorbike Frog	*Ranoidea moorei*
3	Nichollas Toadlet	*Metacrinia nichollsi*
4	Quacking Frog (Noongar name ‘gudjarra’)	*Crinia georgiana*
5	Slender Tree Frog	*Litoria adelaidensis*

APPENDIX 9
Invertebrate species list

MOLLUSKS Documented on iNaturalist			
NO.	**SCIENTIFIC NAME**	**COMMON NAME**	**FAMILY**
1	*Annoselix dolosa*	Helicinan Snails and Slugs (suborder Helicina suborder)	A member of Helicinan Snails and Slugs (suborder Helicina)
2	*Bothriembryon fuscus*	Helicinan Snails and Slugs (suborder Helicina suborder)	Orthalicoidea (superfamily); Bothriembryontidae (subfamily)
3	*?Succinea australis*	Amber Snails	Succineidae

INVERTEBRATE REPORT: WALPOLE WILDERNESS BIOBLITZ, 2022

Identifications and notes by Julianne Waldock, Mark Harvey (arachnids & myriapods) and Corey Whisson (molluscs)

Sample	Family	Species	Notes
PHYLUM MOLLUSCA	Bothriembryontidae	*Bothriembryon fuscus* Thiele, 1930	recorded from site 35
		Bothriembryon sp. nov.	recorded from site 20/21
SUBPHYLUM MYRIAPODA SYMPHYLA		Genus & sp. indet.	impossible to identify due to uncertain taxonomy of the group.
DIPLOPODA (millipedes) ORDER SPIROSTREPTIDA	Lulomorphidae	*Atelomastix ellenae* Edward & Harvey, 2010	endemic to the eastern Warren Bioregion of SW WA.
		Atelomastix francesae Edward & Harvey, 2010	endemic to the eastern Warren Bioregion of SW WA.
		Samichus decoratus Attems, 1911	endemic to the eastern Warren Bioregion of SW WA.
ORDER POLYZONIIDA	Siphonotidae		two species in two genera, also in WWBB 2021 collection.
CHILOPODA (centipedes) ORDER GEOPHILIDA	Chilenophilidae	Genus indet.	impossible to identify due to uncertain taxonomy of the genus.
	Mecistocephalidae	*Mecistocephalus* sp.	impossible to identify due to uncertain taxonomy of the genus.
ORDER Lithobiida	Henicopidae	*Henicops* sp.	impossible to identify due to uncertain taxonomy of the genus.
		Dichelobius flavens	widespread across SW WA.
ORDER SCOLOPENDRIDA	Cryptopidae	*Cryptops* sp.	impossible to identify due to uncertain taxonomy of the genus.
	Scolopendridae	*Cormocephalus*	widespread species in this region.
SUBPHYLUM ARACHNIDA ORDER OPILIONES	Neopilionidae	*Megalopsalis* spp.	impossible to identify due to uncertain taxonomy of the genus.
	Triaenonychidae	Genus 003, sp.	impossible to identify due to uncertain taxonomy of the genus.
		Genus 004, sp.	impossible to identify due to uncertain taxonomy of the genus.
		Genus 008, sp.	impossible to identify due to uncertain taxonomy of the genus.
ORDER ACARI	Trombidiidae	Genus indet.	impossible to identify due to uncertain taxonomy of the family.
ORDER ARANEAE Mygalomorphae	Anamidae	*Proshermacha* sp. indet.	sequence data will be needed to establish the species identification.
	Migidae	*Bertmainius tingle* (Main, 1991)	vacant burrows were located at sites 5 & 35, which are only 2 km from the Big Tingle Tree, one of the confirmed localities for *B. tingle*.

INVERTEBRATE REPORT: WALPOLE WILDERNESS BIOBLITZ, 2022

Identifications and notes by Julianne Waldock, Mark Harvey (arachnids & myriapods) and Corey Whisson (molluscs)

Sample	Family	Species	Notes
Araneomorphae	Araneidae	*Acroaspis* cf.	
	Desidae	*Badumna insignis*	widespread across southern Australia.
		B. longinqua	widespread across southern Australia.
		Genus indet.	impossible to identify due to uncertain taxonomy of the family.
	Gnaphosidae	Genus indet.	impossible to identify due to uncertain taxonomy of the family.
	Lamponidae	*Prionosternum nitidiceps (Simon, 1909)*	this species is widespread across southern Australia.
		Lampona brevipes L. Koch, 1872	widespread across SW WA.
		Lampona cylindrata (L. Koch, 1866)	widespread across southern Australia.
	Linyphiidae	*Laetesia* sp.	impossible to identify due to uncertain taxonomy of the genus.
	Lycosidae	*Artoria cingulipes* (Simon, 1909)	this species is widespread across SW WA.
	Nicodamidae	*Ambicodamus marae*	this species is widespread across SW WA.
	Miturgidae	*Argoctenus* sp.	impossible to identify due to uncertain taxonomy of the genus.
	Salticidae	*Sondra* sp.	impossible to identify due to uncertain taxonomy of the genus.
		Genus indet.	impossible to identify due to uncertain taxonomy of the genus.
	Segestriidae	Genus indet.	impossible to identify due to uncertain taxonomy of the genus.
	Theridiidae	Genus indet.	impossible to identify due to uncertain taxonomy of the genus.
		Theridion sp.	impossible to identify due to uncertain taxonomy of the genus.
	Thomisidae	*Stephanopis* sp.	impossible to identify due to uncertain taxonomy of the genus.
		Tmarus sp.	impossible to identify due to uncertain taxonomy of the genus.
	Zoropsidae	*Huntia deepensis Gray & Thompson, 2001*	this species is endemic to the high rainfall zone of SW WA.
ORDER SCORPIONES	Bothriuridae	*Cercophonius sulcatus* Kraepelin, 1908	this species is widespread across SW WA.

INVERTEBRATE REPORT: WALPOLE WILDERNESS BIOBLITZ, 2022

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Sample	Family	Species	Notes
ORDER SCORPIONES	Bothriuridae	*Cercophonius sulcatus* Kraepelin, 1908	this species is widespread across SW WA.
ORDER PSEUDOSCORPIONES	Atemnidae	*Oratemnus curtus* (Beier, 1954)	this species is widespread across SW WA.
		Oratemnus sp. nov.	this new species is very rare in collections from SW WA.
		Protochelifer sp. nov. 1	this new species is widespread across SW WA.
		Protochelifer sp. nov. 2	this new species has never been collected previously.
	Chthoniidae	*Austrochthonius* sp.	impossible to identify due to uncertain taxonomy of the genus.
	Garypinidae	*Protogarypinus giganteus* Beier, 1954	this species is widespread across SW WA.

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NO.	SUBPHYLUM	CLASS	ORDER	INFRAORDER	FAMILY	GENUS	SPECIES
1	Chelicerata	Arachnida	Acari		Trombidiidae		
2	Chelicerata	Arachnida	Araneae	Mygalomorphae	Anamidae	*Proshermacha*	`sp. indet. (juvenile)`
3	Chelicerata	Arachnida	Araneae	Araneomorphae	Araneidae	*`genus?`*	`sp. indet. (juvenile female)`
4	Chelicerata	Arachnida	Araneae	Araneomorphae	Araneidae	*Acroaspis*	`cf sp. 03 (juvenile)`
5	Chelicerata	Arachnida	Araneae	Araneomorphae	Desidae	*`genus?`*	`sp.`
6	Chelicerata	Arachnida	Araneae	Araneomorphae	Desidae	*Badumna*	insignis
7	Chelicerata	Arachnida	Araneae	Araneomorphae	Desidae	*Badumna*	longinqua
8	Chelicerata	Arachnida	Araneae	Araneomorphae	Gnaphosidae	*`Genus?`*	`sp. WWBB1`
9	Chelicerata	Arachnida	Araneae	Araneomorphae	Lamponidae	*Lampona*	brevipes
10	Chelicerata	Arachnida	Araneae	Araneomorphae	Lamponidae	*Lampona*	cylindrata
11	Chelicerata	Arachnida	Araneae	Araneomorphae	Lamponidae	*Prionosternum*	nitidiceps
12	Chelicerata	Arachnida	Araneae	Araneomorphae	Linyphiidae	*Laetesia*	
13	Chelicerata	Arachnida	Araneae	Araneomorphae	Lycosidae	*Artoria*	cingulipes
14	Chelicerata	Arachnida	Araneae	Mygalomorphae	Migidae	*Bertmainius*	`sp. indet. (empty burrow)`
15	Chelicerata	Arachnida	Araneae	Mygalomorphae	Migidae	*Bertmainius*	`sp. (burrows)`
16	Chelicerata	Arachnida	Araneae	Araneomorphae	Miturgidae	*Argoctenus*	`sp. WWBB1`
17	Chelicerata	Arachnida	Araneae	Araneomorphae	Miturgidae	*Mituliodon*	`tarantulinus?`
18	Chelicerata	Arachnida	Araneae	Araneomorphae	Nicodamidae	*Ambicodamus*	marae
19	Chelicerata	Arachnida	Araneae	Araneomorphae	Salticidae	*`genus?`*	
20	Chelicerata	Arachnida	Araneae	Araneomorphae	Salticidae	*Sondra*	
21	Chelicerata	Arachnida	Araneae	Araneomorphae	Segestriidae	*`genus?`*	`sp. WWBB1`
22	Chelicerata	Arachnida	Araneae	Araneomorphae	Segestriidae	*`genus?`*	`sp. WWBB1? (juvenile)`
23	Chelicerata	Arachnida	Araneae	Araneomorphae	Segestriidae	*`genus?`*	`sp. indet. (juvenile)`
24	Chelicerata	Arachnida	Araneae	Araneomorphae	Theridiidae	*`green when alive`*	`sp. WWBB1`
25	Chelicerata	Arachnida	Araneae	Araneomorphae	Theridiidae	*`Theridion`*	`sp. WWBB1`

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NO.	SUBPHYLUM	CLASS	ORDER	INFRAORDER	FAMILY	GENUS	SPECIES
26	Chelicerata	Arachnida	Araneae	Araneomorphae	Theridiidae	Theridion	`sp. WWBB1`
27	Chelicerata	Arachnida	Araneae	Araneomorphae	Thomisidae	Stephanopis	`sp. WW2`
28	Chelicerata	Arachnida	Araneae	Araneomorphae	Thomisidae	Tmarus	
29	Chelicerata	Arachnida	Araneae	Araneomorphae	Zoropsidae	Huntia	deepensis
30	Chelicerata	Arachnida	Opiliones		Neopilionidae	Megalopsalis	
31	Chelicerata	Arachnida	Opiliones		Triaenonychidae	`genus 003`	
32	Chelicerata	Arachnida	Opiliones		Triaenonychidae	`Genus 004`	
33	Chelicerata	Arachnida	Opiliones		Triaenonychidae	`Genus 008`	
34	Chelicerata	Arachnida	Pseudoscorpiones		Atemnidae	Oratemnus	curtus
35	Chelicerata	Arachnida	Pseudoscorpiones		Atemnidae	Oratemnus	`sp. nov. Walpole small`
36	Chelicerata	Arachnida	Pseudoscorpiones		Cheliferidae	Protochelifer	`sp. Walpole large`
37	Chelicerata	Arachnida	Pseudoscorpiones		Chthoniidae	Austrochthonius	
38	Chelicerata	Arachnida	Pseudoscorpiones		Chthoniidae	Lagynochthonius	australicus
39	Chelicerata	Arachnida	Pseudoscorpiones		Garypinidae	Protogarypinus	giganteus
40	Chelicerata	Arachnida	Scorpiones		Bothriuridae	Cercophonius	sulcatus
41	Myriapoda	Chilopoda	Geophilida		Chilenophilidae	`genus?`	`sp. WWBB1`
42	Myriapoda	Chilopoda	Geophilida		Mecistocephalidae	Mecistocephalus	
43	Myriapoda	Chilopoda	Lithobiida		Henicopidae	Dichelobius	flavens
44	Myriapoda	Chilopoda	Lithobiida		Henicopidae	Henicops	`sp. `
45	Myriapoda	Diplopoda	Polyzoniida		Siphonotidae	`DIP AAF`	`DIP211`
46	Myriapoda	Diplopoda	Polyzoniida		Siphonotidae	`DIP AAG`	`DIP193`
47	Myriapoda	Chilopoda	Scolopendrida		Cryptopidae	Cryptops	
48	Myriapoda	Chilopoda	Scolopendrida		Scolopendridae	Cormocephalus	hartmeyeri
49	Myriapoda	Diplopoda	Spirosteptida		Iulomorphidae	Samichus	decoratus
50	Myriapoda	Diplopoda	Spirostreptida		Iulomorphidae	Atelomastix	francesae
51	Myriapoda	Diplopoda	Spirostreptida		Iulomorphidae	Atelomastix	ellenae
52	Myriapoda	Diplopoda	Spirostreptida		Iulomorphidae	Samichus	decoratus
53	Myriapoda	Symphyla					