



Whitsunday
Catchment
Landcare

Newsletter

September 2020

www.whitsundaylandcare.org.au



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Central QLD Coast
Landcare
Network

A partnership for the natural resource management of catchments in the Central QLD Coast Bioregions.

CATCHMENT COORDINATOR:

Cath Campbell

Ph.: 0408 187 944

coordinator@whitsundaylandcare.org.au

PROJECT OFFICER:

Chris Barbeler

Ph.: 0488 768 567

project@whitsundaylandcare.org.au

CONTACT US FOR INFORMATION:

- Natural Resource Management
- Land management Plans
- Native plants
- Environmental weeds
- Volunteer activities

BECOME A VOLUNTEER:

Come seed collecting; learn to identify native plants; how to propagate them; improve your environment; enjoy the outdoors in a fun, social setting.

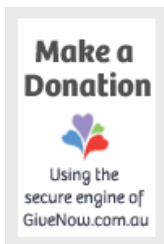
If you're interested in doing your bit for the environment and socialising with like-minded people, we offer coordinated activities on Tuesday & Thursday mornings and more. Contact us!

WCL Management Committee:

Graham Armstrong, Chair
Scott Hardy, Deputy Chair
Jacquie Sheils, Secretary
Glenda Hodgson, Treasurer
Dale Mengel
John Casey
WRC representative TBA

WCL is a community not-for-profit group, relying on grants & donations.

We are a registered charity; donations of \$2 or more are tax deductible. To make a donation please contact us or go to our page:



Coming Up in September
Volunteer activities are held on Tuesday & Thursday mornings– 9am-12noon
Please wear long sleeved clothing, a hat & closed in shoes.
Due to the Covid 19 virus please bring you own morning tea & cup please.

COMMUNITY NURSERY OPEN FOR PLANT SALES (CASH ONLY)
9am-12noon Tuesday, Thursday & the 1st Saturday of each month-
Next Saturday opening—5th September 2020

At the Community Nursery & Volunteer Activities in September
33 Kelsey Creek Rd Proserpine
Tuesday & Thursday 9am—12.30pm.
For enquiries please Ph. 0408 187 944 or email: coordinator@whitsundaylandcare.org.au

Tuesday	Thursday
1st: Nursery Maintenance & propagation activities	3rd Propagation, Seed processing, Potting, Record keeping etc. at the nursery.
8th: Nursery Maintenance & propagation activities	10th: Propagation, Seed processing, Potting, Record keeping etc. at the nursery.
15th: Nursery Maintenance & propagation activities	17th: Propagation, Seed processing, Potting, Record keeping etc. at the nursery.
22nd: Nursery Maintenance & propagation activities	24th: Propagation, Seed processing, potting, Record keeping etc. at the nursery
29th: Nursery Maintenance & propagation activities	

WCL receives support from the following organizations:



Australian Government
Department of the Environment



What goes around comes around-WCL volunteers helping our members & volunteers with sustainable land management, on their properties.

WCL volunteers out & about in the field-

When: Thursday the 20th August

Where: Jessica Aldred & Alistair Lyons place at Evans Road , Preston

After having a Land Management Plan prepared for their site by WCL in 2019 , Jess & Alistair followed the recommended steps required to undertake & prepare for the planting part of a revegetation project.

After controlling the weeds, installing mulch in the allocated revegetation area and ensuring they have enough water onsite to provide for the new plantings during the dry season, Jess & Alistair selected & bought plants from the WCL Community Nursery.

Eight volunteers arrived at the site on the 20th August, gloves in hand & hats on heads, all ready to plant the first lot of tube stock within one of the 3 areas on their property, Jess & Alistair plan to revegetate.

It was a beautiful morning and the volunteers worked hard to get a total of 280 plants in the ground. Jess & Alistair provided the morning tea for the mid morning break and are very pleased with the results.

So thank you to the volunteers that participated in planting & to Jess & Alistair for supporting WCL with your membership, volunteer commitment at the nursery and the purchase of plants. It is great to be able to support one another.



Above: 300 plants watered & ready to go to the revegetation site. Photo: Jessica Aldred

Left:

The site to be revegetated– the longer grassed area was weed sprayed & mulched installed prior to planting on the 20th August.



Left: Just few of the volunteers planting amongst the mulched area

Photo: Jessica Aldred

Detection of the invasive jaguar cichlid *Parachromis managuensis* (Gunther, 1867) across the Pioneer River catchment utilising environmental DNA (eDNA) protocols

P. managuensis is a member of the cichlidae family, originating from Central America and is a highly aggressive piscivorous species capable of reaching upwards of 55 cm in the wild (Kullander, 2003). Warm, eutrophic low flow systems are its preferred habitat which are consistent with conditions found in many wetland regions of Queensland's coastal streams. Queensland systems such as the Pioneer River, lack an equivalent native species and this means *P. managuensis* is unlikely to experience much competition and its prey species are not adapted to effectively combat predation. The species is capable of spawning past 10 cm and both parents aggressively defend several thousand eggs laid onto hard substrates. The resulting fry are further defended and guarded by the parents aiding the species survival by mitigating the most vulnerable stages. These factors culminate in a species which not only is likely to thrive but also have a significant impact on native biodiversity. The presence of the species in the aquarium trade, despite it being illegal to import, distribute or keep *P. managuensis* in Queensland is a likely cause for the initial infestation.



Above: Adult jaguar cichlid

Photo: © G.Chernilevsky,

WikiCommons

Photo: Steve & Alison Pearson

The recent naturalisation of the invasive jaguar cichlid *Parachromis managuensis* (Holmes et al., 2020) in the lower regions of the Pioneer River, Mackay, Queensland, raises several questions relating to the future management of the catchment, and is critical to the broader region that further investigation is undertaken before the species spread even further. *P. managuensis* is an aggressive central American cichlid, with a history of successful non-native establishments across North America, China, Hawaii, Taiwan and several other nations (Marsh et al., 1989; Gestring and Shafland, 1997; Ma et al., 2003; Nico et al., 2016). Due to the suitable climatic conditions of the Mackay region, there is a high likelihood that the species will rapidly expand throughout the Pioneer River Catchment (Arthington et al., 1999, Moore et al., 2010). Further impacts to the native fish species has now ensued, with an important nearby fishway remaining closed to stop the spread of the invasive fish to the middle reaches of the catchment. Over 20 native species which undergo life cycle dependent migrations between fresh and salt water environments are now restricted to the lower portion of the catchment. The impacts to their populations remains to be realised.

New project to be undertaken:

Understanding and detecting invasive species at their invasion fronts is vital to successful management, as accurate tracking of species spread allows the potential for physical barriers and other management techniques to be applied effectively. Recent sampling using traditional fishing techniques such as netting and electrofishing have been undertaken in the Pioneer River Catchment, however the vast majority of sites were focused within the now confirmed range in the lower Pioneer. Furthermore, these samples were taken using conventional techniques which are typically ineffective at detecting low abundance populations (Bajer & Sorensen, 2012). Recently established populations, and especially species invasion fronts, are expected to have low abundance, leading to high risk of false negatives (Havel et al., 2015). This means that there is a risk that *P. managuensis* had not been detected above the weir and as such the migration of native species may be constrained in the attempt to block an invasion which has already occurred. This highlights the need to investigate the *P. managuensis* populations across the catchment in order to effectively inform management decisions.

Advances in molecular techniques have led to a recent more widespread embrace of environmental DNA, or eDNA, as a non-invasive, highly sensitive detection tool. Aquatic species readily disperse eDNA through excrement, shedding skin cells, scales and decomposition (Maruyama et al., 2018). This eDNA can be detected despite low DNA concentrations, presence of multiple non-target species (McKelvey et al., 2016) and trumps traditional methods in speed, sensitivity and cost (McKelvey et al., 2016). This project's primary aim is to utilise eDNA through the application real time PCR (rtPCR) to determine *P. managuensis* distribution in the Pioneer River and to assess the likelihood of this species being established above the Dumbleton Weir. These data can then be used to inform management, and potentially leading to the development of a series of protocols for the detection and monitoring of this invasive species with expansion to include other local pests including tilapia and peacock bass.

Project team

Michael Mottley (field work, project design, lab work, data analysis), Dr David Hurwood (project design, report writing, data analysis), Dr Peter Prentis (report writing) – School of Biology and Environmental Science, Science and Engineering Faculty, Queensland University of Technology (QUT)

Dr Bonnie Holmes (project design, data analysis, report writing) - School of Science & Engineering, Animal Ecology, University of the Sunshine Coast

Trent Power (project design, field supervision, stakeholder liaison) - Catchment Solutions Pty Ltd

<https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/land-management/health-pests-weeds-diseases/pests/invasive-animals/other/jaguar-cichlid>

Getting to Know Our Whitsunday Wildlife & Plants

Steve Pearson is a local dedicated nature photographer. Steve is a retired QP&WS ranger who spent a large part of his career at Eungella and in the Whitsundays. Assisted by his wife Alison, Steve has accumulated a comprehensive photographic reference of plants and also, the less understood and under-appreciated elements of our region's ecology such as invertebrates and fungi. To view more of his photos go to – [steveandalison1@flickr](https://www.flickr.com/photos/steveandalison1/)

This month's feature spider has been identified as *Nephilengys malabariensis*, a tropical spider currently placed in the family Araneidae, but was formerly placed in the family Nephilidae. I think it looks and behaves more like it should be in family Theridiidae along with the redback spider.

Nephilengys malabariensis is quite wide spread being found here locally and north to South-East and East Asia from India and Sri Lanka to the Philippines, north to Yunnan, China, north-east to Saga and Kompira, Japan and east to Ambon Island of Indonesia. In the northern regions it is common in human dwellings but here I have only seen it in the mangroves and adjacent forest.

I called it mangrove spider but in other countries they have been

called hermit spiders because of their habit staying in their retreats during the day and only rushing out if something gets caught in the web.

Its web structure and most of its behaviour are so much like that of a redback spider that it is quite likely some people have mistaken them for redbacks. *Nephilengys* are generally nocturnal spiders, spending most of the day in their retreat and nights out on the hunt.



Above: *Nephilengys malabariensis*, web hub in damaged tree trunk
Photo: Steve & Alison Pearson

One interesting habit they have that is different to redbacks is that, if they rush out onto the web and find nothing, they start bouncing and they keep bouncing for quite a while, as though they are having a bad tantrum. They look similar to the shape and size of an immature female redback spider, that does not have the obvious red streak on the back like a mature one. But on close inspection, you can see the shape of the abdomen is a little different as it has 2 points on the abdomen, that the redback doesn't have.

In our area our *Nephilengys* mangrove spiders build their webs on tree trunks, usually, in a protected sheltered spot like under a big branch fork or in a damage area on the trunk. I have seen them in a damaged area on a tree trunk about a metre above the ground and the web stringers went all the way to the ground whilst the spider hid up in the damage hole in the tree trunk, just like redbacks in the wild.



Above: *Nephilengys malabariensis*, out on its web.
Photo: Steve & Alison Pearson

Young *Nephilengys* spiders build an orb web but also have stringer web lines like the mature ones, and interestingly they only rebuild damaged parts. Like redbacks the females are much larger than males and can be 5 times as big. Like some redbacks, adult male *Nephilengys* do not build their own webs, but live with females, sometimes several males can be found living on the outer edges of the web of a female. Researchers have found that mature males do not have silk glands that produce sticky silk so they live off what they can steal off the female and her sticky web.

Nephilengys behaviour is similar to redbacks and males have been seen to sneak in and mate with the female while she is shedding her shell and is all tangled up and unable to catch and kill the male. Some have been observed to mate with a freshly moulted female while her cuticula are still soft.

It has also been observed that some males leave their mating organs stuck in the female genital opening, blocking it possibly to prevent other males from mating and ensuring theirs is the only gene pool for the next generation.

I could find no records of any people being bitten and the record stated the toxicity of the venom was " Unknown -so handle with caution. "

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This month our feature plant is locally known as Mackay Cedar and has the scientific name **Falcataria toona** of the plant Family **Fabaceae**, Falcataria is its current name present and could change in the future. Past names include: Albizia then Paraserianthes and then Falcataria and it was in the Mimosaceae family. Common names include Acacia Cedar, Red Siris and Mackay cedar.

Anyhow, August is the nominated flowering time and some are flowering now. It is a very patchy tree, a real "could be" tree, with some that "could be" flowering and others not. Flowering "could be" successful and seeds "could be" setting but many times it does not happen, good flowering does not necessarily mean a good crop of seed is coming. Trees could still have leaves now but might not as it is near the end of winter. This plant is sometimes deciduous and sometimes not, so it could be leafless for a period between end of July and the end of October.

It can grow into a very large tree and left long enough, can develop good millable logs. The timber varies in colour from a lovely deep red to paler or even right back to yellowish or a mixture, you just do not know, until it is cut and milled. The good deep red timber was very much sought after but many timber getters were left disappointed.

One thing for sure, Falcataria toona does not do real well in severe cyclones. The one in a sheltered gully about 20 metres from our home, was torn apart by cyclone Debbie. It snapped off about 6 metres up the trunk, so if you want to grow it in your patch make sure it is not close to any buildings or driveways. The remaining stump and trunk have shot new growth and it is starting to look good again, so the cyclone damage did not kill it like a lot of other species.



Above: Falcataria toona leaflets Photo: Steve & Alison Pearson



Above: Falcataria toona - gland on leaf rachis, flower buds & flower
Photo: Steve & Alison Pearson

When Falcataria toona has leaves, they are compound with very small leaflets about 3-9 mm long. There is a fairly large raised gland on the leaf stem, if you know what you are looking it is normally visible, as in the photo. It is on the upper leaf stem surface and the gland sometimes weeps liquid when the flowers are ready to perform.



Above: Falcataria toona tree in flower
Photo: Steve & Alison Pearson

The weeping liquid attracts some large insects, big moths at night and beetles during the day when the male part of the flower is ready to disperse its pollen into the air. Insects hunting for the gland and its liquid, have beating wings and bump about the foliage causing the male part of the flowers to release the pollen into the stirred up air, so once airborne it drifts off. Some pollen might settle on another Mackay Cedar tree and land on the female part of the flower. If the flower is ready at that time pollination might be successful and then a seed pod might develop. The female part of the flower is not normally receptive as the male parts on the same flower, reduces the chance of self pollination that can cause genetic weakening of the species.

The flower and seed pod do look quite like some wattles, acacias, thus the one old common name acacia cedar. The seed is similar to a wattle seed and can lay dormant in the leaf litter for many years. Anyhow, our local common name Mackay Cedar, shows it is quite common locally and can be seen growing out in the open forest, as a pioneer that is dense and shady for most of the year. This creates a shade shelter which discourages grass growth which reduces the fuel level build up and any possible wildfire intensity. It also favours other shade loving species which may grow under it creating a young rainforest patch that can spread out over time.

Young trees often have a relatively smooth bark but older bigger more mature trees can have rough big flakey bark. It is said to be endemic to coastal forests from central Queensland north to Cape York Peninsular—so is right at home here in our patch.

PARTICIPATE IN RESEARCH

Information for Prospective Participants

What influences survivors of multiple natural disasters to continue living in the same disaster-prone location**Research team contacts**

Principal Researcher: Marie Fredriksen, PhD Student
 Associate Researchers: Dr Sam Toloo, School of Public Health & Social Work (PHSW)
 A/Professor Trish Obst, School of Psychology & Counselling
 Dr Ros Darracott, Queensland Health & School of PHSW
 Faculty of Health, Queensland University of Technology (QUT)

What is the purpose of the research?

The purpose of this research is to identify what preparedness means for a population who have learnt how to learn to live with natural disasters in terms of

- Preparing for natural disasters
- Preparing to rebuild and continue living in the same disaster-prone location
- Preparing to adapt to a community that will to some degree change after each natural disaster

The study also seeks to identify the factors that motivates, allows, and sustains people to continue living in the same location after repeated natural disasters.

Are you looking for people like me?

The research team is inviting residents 25 years and over who have lived continuously in the Whitsunday Regional Council through successive natural disasters

What will you ask me to do?

Your participation will involve completion of a short survey and a face-to-face interview which will take approximately 45-60 minutes to complete. The interview will be audio recorded.

Are there any risks for me in taking part?

The research team has identified the following possible risk in relation to participating in this study: Recalling natural disasters may cause you some discomfort or even distress as can participating in an unfamiliar face-to-face research interview process. You may wish to consider whether participation in this study is right for you.

AND

It should be noted that if you do agree to participate you can withdraw from participation in the research project without comment or penalty.

Are there any benefits for me in taking part?

It is expected that this research project will not benefit you directly. The findings, however, may benefit the wider community. This study will provide agencies responsible for disaster response and recovery with a better understanding of what community and individual preparedness mean to a population who have learnt how to live with frequent natural disasters. Furthermore, by identifying what motivates, allows, and sustains people to continue living in a disaster-prone location may help identify strategies to reduce the outmigration that can occur because of natural disasters.

Will I be compensated for my time?

No, but we would very much appreciate your participation in this research.

I am interested – what should I do next?

For details of the next step, please contact:

Marie Fredriksen **m.fredriksen@hdr.qut.edu.au** **0477 936 117**

You will be provided with further information to ensure that your decision and consent to participate is fully informed.

Thank You!

QUT Ethics Approval Number: 1900001120

DICTIONARY OF BOTANICAL NAMES

compiled &
illustrated by Don Perrin

An attractively illustrated book about the meaning, derivation and application of Australian plant names.

Book sales & enquiries:
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**Whitsunday Catchment Landcare (WCL)
Sustainable Land Management Services.**

We are seeking to encourage *non-commercial* landholders in the sustainable management of their land and offer the following assistance on a **fee for service** basis:

- **Site visits & Land Management Advice**– verbal advice to landholder.
- **Land Management Plans** (3-5 year documented site specific plans)
- **Weed Control Services**– targeted to have minimal impact on native vegetation & maximum impact on weed species & undertaken by WCL's qualified & licensed staff using our weed control equipment.
- **Revegetation site preparation & planting of native tube stock**– skilled staff to implement your revegetation project.
- **Hire of weed control equipment**– Landholder operated after training by WCL staff

If you would like advice on how to sustainably manage the weeds or native vegetation on your land, please consider the services offered by WCL.

Please email the Coordinator at: coordinator@whitsundaylandcare.org.au for the fee schedule & detailed description of services offered.
Or call mbl: 0408 187 944 to discuss your requirements.

WCL Community Nursery– Always Needs Seeds

The WCL Nursery is very keen to source endemic seed so please keep an eye on your flowering native trees, shrubs & grasses for the volunteer nursery. Some of the species we need are:

Acacia– all local species	
Archontophoenix alexandrae	Alexander Palm
Allocasuarina torulosa	Black she-oak
Aidia racemosa	Archer Cherry
Atalaya rigida	Veiny Whitewood
Breynia oblongifolia	Coffee Bush
Cajanus reticulatus	Native Pigeon Pea
Carallia brachiata	Freshwater mangrove
Casuarina cunninghamiana	River oak
Chionanthus ramiflorus	Native Olive
Cordia subcordata	Sea Trumpet
Corymbia clarksoniana	
Corymbia intermedia	Pink Bloodwood
Corymbia tessellaris	Morton Bay Ash
Cryptocarya hypospodia	Large leafed Laurel
Cupaniopsis anacardioides	Tuckeroo
Dysoxylum gaudichaudianum	
Elaeocarpus grandis	Blue Quandang
Eucalyptus crebra	Narrow-leafed Ironbark
Eucalyptus platyphylla	
Eucalyptus exserta	QLD Peppermint
Eucalyptus tereticornis	QLD Blue Gum
Euroschinus falcatus	Ribbonwood
Ficus racemosa	Cluster fig
Hymenosporum flavum	Native frangipani
Ganophyllum falcatum	Scaly Ash
Lophostemon confertus	Brush Box
Lophostemon grandiflorus	Nthn Swamp Mahogany
Lysiphyllum hookeri	Hookers Bauhinia
Macaranga tanarius	Macaranga

Melaleuca dealbata	Blue Tea Tree
Melaleuca leucadendra	
Melaleuca viminalis	Weeping Bottle Brush
Melicope elleryana	Corkwood, Euodia
Memecylon pauciflorum var. pauciflorum	
Micromelum minutum	Native Lime Berry
Pandanus sp.	
Ptychosperma elegans	Solitaire palm
Sterculia quadrifida	Peanut Tree
Syzygium australe	River cherry
Timonius timon	Tim Tam Tree
Trema tomentosa var. aspera	Peach-leafed Poison Bush
Trema orientalis	
Vitex trifolia	Vitex

Guidelines for seed collecting:

- Only collect seed from your own property or with written permission
- Source plants must have grown from seed from the Whitsunday Region
- Collect ripe, mature seed & no more than 10% of the seed from any one plant
- Collect from several parts of the plant, mainly the middle & upper branches
- Use paper bags (not plastic) to store the seed & keep them in a cool place
- Label the bag with the species, location, date and your name. Not sure of your identification? Include a stem with some leaves & /or take a photo.

You can drop seed off at the nursery on Tuesday or Thursday mornings, or at Reef Catchments, 45 Main St Proserpine, or call 0408 187 944.

INTERESTING WEB SITES:

Native Animals, Insects, Birds:

www.whitsundaylandcare.org.au

<http://www.wildlife.org.au/magazine/>

<http://www.aussiebee.com.au>

www.birdsinbackyards.net

www.australianmuseum.net.au/reptiles

<http://birdlife.org.au/locations/birdlife-mackay/activities-mac>

Native plants:

<http://ausgrass2.myspecies.info/content/oplismenus>

<https://www.anbg.gov.au/cpbr/cd-keys/rfk/>

<https://www.eucalyptaustralia.org.au/>

<http://sgaptownsville.org.au/>

www.facebook.com.au/sgapmackay

Wetlands

<http://wetlandinfo.ehp.qld.gov.au/wetlands/ecology/components/flora/mangroves/mangrove-moreton.html>

Feral Animals: feralflyer@invasiveanimals.com

<https://alumni.uq.edu.au/cane-toad-baits>

Feral plants:

www.weeds.org.au

www.environment.gov.au > Biodiversity > Invasive species > weeds

www.iewf.org/weedid/index_by_reserve.htm

www.anbg.gov.au/cpbr/herbarium/

You can make a tax deductible donation to the Whitsunday Catchment Landcare Fund at any time. Just go to <http://www.givenow.com.au/whitsundaycatchmentlandcare> All donors will receive a receipt from Givenow at the time of the do-

If you would like to receive this e-newsletter please email coordinator@whitsundaylandcare.org.au with your request. Or you can phone Cath on mbl:0408-187-944 to request one.

Disclaimer: Information in this newsletter is offered as a guide only and while every care is taken to ensure its accuracy, Whitsunday Catchment Landcare does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.

Make a Donation



Using the secure engine of GiveNow.com.au

Thank You Everyone!

Thank you to so many of you who have generously and kindly donated your container refunds to WCL. To date (July 2019– January 2020)we have had **\$ 159.50 donated**. Please find below our Containers for Change ID number to conveniently cut off and include in your bags. Your contributions are allocated to the WCL Public Fund which allows WCL to take on various projects for the ongoing education of our members and the wider community. Thank You again!

ID: C10053139

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