TESS Newsletter - November 2026



Hello TESSians,

As the year begins to draw to a close, there is plenty happening across the TESS community and even more to look forward to in 2027. Planning is now underway for our **TESS Retreat on 27–28 January**, bringing TESSians together for two days of ideas, discussion, student showcases, celebration and, naturally, some good food.

In this edition, you'll find details of the Retreat and our **2026 student awards**, along with the latest research, seminars and opportunities from across the TESS community. We're also dipping back into the **TESS Seminar archives**, this month revisiting Andrew Dennis's fascinating look at how research has informed the conservation of two threatened Wet Tropics mammals.

So grab a coffee, have a browse, and please don't forget to send us your Retreat award nominations before Christmas!

All the best,
Susan Laurance, Director
Anabel Belson, Coordinator
Image Credit: Kennedi

CENTRE NEWS

TESS Retreat - January 2027

Save the date! We are in the planning phase for a TESS Retreat to be held on 27-28 January, 2027.

On Wednesday 27 January, there will be a welcome lunch followed by an afternoon session, then a celebratory dinner. On Thursday 28 January, there will be a morning session followed by a farewell lunch. We will be inviting external speakers and would also like to have student PechaKucha and poster sessions, where students can showcase their work. As part of the celebrations we will be presenting research awards ($$) to students for:

- Best Student Led Paper (Published) 2026
- Best Student Presentation
- Best Student Video
- Photography Award

Please nominate yourself, or someone else, and send in your entries as soon as possible so our panel can decide. Closing date for entries is 12 pm (noon) 24 December 2026, but don't wait until the last minute.

If you would like to attend, please email Anabel (anabel.belson@jcu.edu.au). Please note that numbers are limited, but we welcome all TESSians. Oh, and please don't be shy with offers of assistance.

Revisiting the Archives

The TESS Seminar archives are an amazing resource of valuable research. This month we are highlighting:

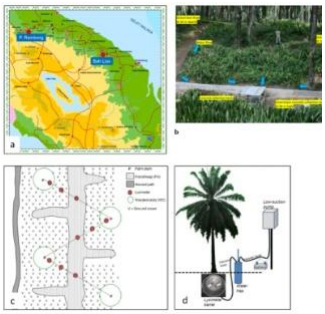
Integrating research into management: the tales of two threatened mammals - Andrew Dennis

In this talk, Andrew reviews several decades of effort expended on the recovery of two threatened mammals in the Wet Tropics – the Northern Bettong and the Mahogany Glider – and examines where and how research efforts have been used to guide on-ground actions to facilitate the recovery of these threatened species.

Find out more about TerrainNRM's invaluable work. Learn more...

PAPER ALERTS

This month's selection of TESS publications, commencing with:



Potassium and magnesium losses via runoff and leaching under oil palm at contrasting sites - Noto E. Prabowo, Han She Lim & Paul N. Nelson

High rainfall and weathered soils in the humid tropics create challenges for nutrient management in agriculture. Fertiliser trials in Sumatra have shown variable oil palm responses, possibly due to nutrient losses via runoff and deep drainage. This study quantified losses of K and Mg in both pathways to support nutrient balance calculations and facilitate site-specific fertiliser recommendations.

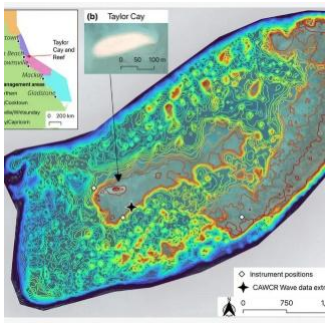
Image credit: Noto E. Prabowo



Ultraviolet radiation exposure during larval development is associated with changes in colouration of Green and Golden Bell Frogs (Ranoidea aurea) - Ewan S. Auld1, Aimee J. Silla, John A. Endler and Phillip G. Byrne

Ultraviolet (UV) radiation can be harmful to amphibians by causing DNA damage, impairing immune systems and restricting growth. In response to elevated UV, amphibians have been observed to invest in skin darkening for photoprotection. However, it is unclear whether investment in pigmentation persists across life stages, or whether there are other carry-over effects of UV exposure on amphibian colouration.

Image credit: LiquidGhoul



[Major and Rapid Morphodynamic Changes to an Unvegetated Cay Under Typical Weather Conditions: Taylor Cay, Central Great Barrier Reef, Australia]
- Emily Lazarus, Holly Muecke, Stephen Lewis, Scott Smithers, Stephanie Duce

Cays are low-lying accumulations of carbonate sediment, formed and modified by hydrodynamic processes acting over coral reef platforms. More than 230 cays occur within the Great Barrier Reef (GBR), supporting valuable ecosystem and cultural functions. Although unvegetated cays are generally small, they comprise 55% of all GBR cays. Despite their prevalence, the morphodynamic behaviour of unvegetated cays on the GBR has rarely been documented. Taylor Cay is an 8400 m2 unvegetated cay located on the central GBR that supports valuable seabird nesting habitat.

Image credit: Emily Lazarus

HDR / ECR

Desert Discovery BioBlitz

Over two weeks in September, five JCU students took part in a two-week bioblitz with Desert Discovery in remote Nilpena-Ediacara National Park (South Australia), including TESS's very own Matthew Connors, Sophia Love, and Andrea Frascotti. On the land of the Adnyamathanha people, the park is renowned for its fossils of early complex life and is in the running to be listed as a World Heritage Area. Desert Discovery is composed of researchers and volunteers with a passion for the natural world from across Australia, and had several different groups running projects simultaneously, including botanists, birders, and small reptile/mammal experts. Led by Matthew, our students of course ran the invertebrate project, with the goal of creating as detailed a species list as possible for the park rangers and traditional owners to use.

Their trip was a huge success, and they photographed and collected hundreds of different bugs ranging from butterflies, moths, and dragonflies to stick insects, katydids, spiders, scorpions, and even some desert snails. Among the highlights were numerous new and undescribed species, including some that may never have been recorded before. Their efforts at Nilpena will provide a much-needed baseline of invertebrate diversity for the park and will be an important source of information for park rangers, traditional owners, conservation workers, researchers, and anyone else with an interest in invertebrate diversity in this vastly understudied area of Australia.

Image credits: Matthew Connors









Pre-completion Seminar - Natalia de Aguiar Campos

Title: Drought effects on rainforest plant water use

Abstract: Plant transpiration plays a key role on the global hydrological cycle, estimated to contribute 60-90% of the total water flux from land to the atmosphere. However, climate-change-induced droughts pose risks to the maintenance of this process, particularly among tropical rainforest trees, which have evolved under a humid and stable climate. This thesis has two main goals: the first, to identify optimal data collection and analysis approaches to estimating tree transpiration from sap flow data; the second, to investigate changes in tree transpiration linked to soil drought. The field component of this study was conducted in a 10-year throughfall-exclusion experiment in the Daintree rainforest. In the first half of the thesis, through a systematic review and an empirical study, I identified common shortcomings and biases in tree transpiration estimates and proposed ways to mitigate them. In the second half, I investigated the role of internal hydraulic adjustments across different species in response to the throughfall-exclusion treatment, as well as the combined effects of throughfall exclusion and vine competition on tree transpiration. The main findings of this thesis are that (i) some neglected aspects of sap flow data collection can introduce errors of up to ~50% in transpiration estimates, (ii) stratification approaches to estimate forest-level transpiration should incorporate degree of crown exposure for greater accuracy, (iii) a ~20% reduction in soil moisture did not affect tree transpiration totals but influenced internal hydraulic adjustments across trees in the Daintree rainforest, and (iv) canopy-level liana competition did not lead to significant increases in transpiration, regardless of soil moisture. Overall, these findings may support field-based sap flow research and ecohydrological modelling by, simultaneously, proposing targeted solutions to improve on-the-ground transpiration estimates and revealing mechanisms of hydraulic coordination of rainforest trees under climate change.

Date and Time: Thursday, 3 December 9:am AEST
Location: D001-123

HDR Morning Tea

Our last morning tea for the year will be 10:00 – 11:00 on Tuesday 10 November, same venue, Building E2 Room 111. Come and swap research stories, have coffee and cake and chat to our host.



Image credit: Magda Ehlers

UPCOMING EVENTS

New Grass and Sedge workshop dates in Brisbane

November 2-3 - Brisbane (Grass Workshop)

The Grass program includes an in-depth dive into the most commonly encountered northern Australian genera of Poaceae - *Aristida, Eragrostis, Sporobolus, Eriachne, Panicum, Digitaria, Paspalidium, Bothriochloa, Dichanthium, Themeda, Chloris, Enteropogon* and *Enneapogon*.

Grass workshop – 2-3 November 2026 – book via Humanitix here: https://events.humanitix.com/introduction-to-grass-id-skills-workshop-66lbtf3f

November 5-6 - Brisbane (Sedge Workshop)

The Sedge program will include sessions on using the family key to Cyperaceae, and individually on the genera *Cyperus, Fimbristylis, Scleria, Schoenus, Eleocharis* & *Carex*.

It will also focus on how to tell Cyperaceae apart from similar families such as Restionaceae and Juncaceae. Both workshops are lavishly illustrated with microscope images and scans, are full of ID tips, and will be an asset for participants for years to come.

Sedge workshop – 5-6 November 2026 – book via Humanitix here: https://events.humanitix.com/sedge-id-skills-workshop

November 12 - JCU's Nguma-Bada Campus, Smithfield

TESS Seminar - Ray Wills

Title: The fastest energy transition in human history: a global perspective.

Summary: The global energy transition is accelerating as falling costs drive rapid growth in renewables, battery storage and electrification. This presentation explores what this transformation means for energy markets and for Australia's competitiveness, investment and regional development.

Click here for more information.

ATH's Weed ID Workshop

November 26-27 - JCU's Nguma-Bada Campus, Smithfield

The Australian Tropical Herbarium, the Centre for Tropical Biosecurity, and James Cook University are offering a new round of our Weed Identification Workshop, to be delivered on November 26-27 at JCU's Nguma-Bada Campus (Smithfield, Cairns).

This is a hands on workshop running for two days from 9 am to 4 pm. The workshop is intended for people willing to go beyond visual identification, and aiming to learn

how to recognise plant traits that can be used with botanical keys. Click here for more information.

The cost of the workshop is $650, and it includes a hand lens, forceps, a printed manual, and morning tea and lunch for both days. Shared tablets with the necessary applications and tools will also be provided in addition to the manual, but you are welcome to bring your own device if you prefer. Please register your expression of interest in the link below.

Expression of Interest: Weed ID Workshop – Fill out form

ESA2026

29 November - 4 December - Brisbane Convention Centre, Brisbane

ESA2026 will deliver a dynamic and engaging program showcasing the latest ecological research, innovation and practice from across Australia and the broader ecological community.

The conference program will feature a range of presentation formats, including poster presentations, five-minute speed talks and 15-minute oral presentations, providing opportunities for delegates at all career stages to share ideas, research findings and practical insights.

In addition to the scientific program, ESA2026 will offer a diverse range of workshops, field trips, networking opportunities and social events designed to foster collaboration, professional development and meaningful connections across the ecological community.

SCBO Conference 2026

30 November - 4 December – Auckland, New Zealand

The joint Te Aka Toro | New Zealand Ecological Society (NZES) and the Society for Conservation Biology Oceania (SCBO) 2026 Conference with the theme, “Changing the Conversation – Ecology in a Shifting Political Landscape”.

Australian Tropical Herbarium - Rainforest Plant ID courses 2026

4-6 December - Daintree Rainforest Observatory, Daintree

The Australian Tropical Herbarium is pleased to announce dates for its annual Rainforest Plant Identification courses. Targeted at the interested layperson, the three-day introductory workshop will:

- Describe the characteristics and values of Australia’s tropical rainforests
- Teach you the terminology used to identify Australian tropical rainforest plants
- Introduce you to the free online tools used for rainforest plant identification
- Review the field identification characteristics of important rainforest plant families

This year we will be presenting courses at James Cook University’s Nguma-bada Campus in Smithfield, Cairns, and at the Daintree Rainforest Observatory at Cape Tribulation.

Please contact enquiry@ath.org.au for further info.

Updates will also be provided on the TESS website Events and Opportunities page.

DID YOU SEE ... ?

Recyclers say buried mining tyres going to waste amid global rubber shortfall - ABC News

Tiny creature kindness badges - First Dog on the Moon

Bush Heritage hopes to buy Wooroora station

New research reveals more about volcanic origins of Lord Howe Island

This fascinating work on butterflies

ENDNOTE

We hope you enjoyed this issue and learning more about the people and projects shaping tropical environmental research at and around James Cook University. If you are interested in collaborating with researchers from the Centre for Tropical Environmental and Sustainability Science, we would love to hear from you.

Credits: Masthead Image – Staurois guttatus © Kennedi; *Ranoidea aurea* © LiquidGhoul (License); Omorgus sp., Acrophylla nubilosa, dragonfly © Matthew Connors; Cup of coffee © Magda Ehlers.

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