



Trees for the Evelyn and Atherton Tablelands Inc

The right tree in the right place for the right reason

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Annual General Meeting

The 24th TREAT AGM will be held in the Yungaburra Community Hall on Friday 18th August starting at 7.30pm. Our guest speaker will be Dr. David Westcott, a research scientist with CSIRO in Atherton. David will give a presentation of recent research conducted by CSIRO into "Seed Dispersal in Australia's Tropical Rainforests". Also at the AGM this year will be the launch of Joan Wright's book about the early years of TREAT. Annual reports by the President, Treasurer and Nursery Manager will be followed by the election of new office bearers and committee members, and a General Meeting. Members are reminded that they must be financial when voting for the new committee. Subscriptions will be accepted at the AGM. There is a supper afterwards and plate contributions are appreciated. All are welcome to attend.

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Cyclone Larry

by Nigel Tucker, Jeff Middleton and Kris Kupsch (Biotropica Australia)

As tropical forest scientist Mike Hopkins once wrote, "disturbance is the forest transformer". No ecosystem on Earth is unaffected by disturbance; it is one of the major drivers of the ongoing evolution of all species. In fact, the "intermediate disturbance hypothesis" proposes that biodiversity is highest when disturbance is neither too great nor too small. Try to imagine a forest where no leaves or trees fall, where streams remain forever fixed and unaffected by flooding, and animals and plants remain static in space and time. This is the road to an evolutionary abyss. Natural disturbance is part of Darwinian evolution, the selection of individuals with superior ability to recover and persist. In fact, cyclonic disturbance in north Queensland is a bit like the evolutionary process itself - as Steven Jay Gould once described it, "like the life of a soldier - long periods of boredom interspersed with short periods of terror". Sifting and sorting the survivors of this brief terror is going on as you read this article.

For the forests between Cairns, Tully and surrounding hinterland, Cyclone Larry was not a much stronger cyclonic event than has been experienced in many decades. Damage can be attributed to two main factors: the strength of the core winds generated, and the highly fragmented nature of our vegetation due to historical clearing. These elements combined to produce a wide range of responses from many species, varying from "ho-hum" to "what the??". This article seeks to describe these responses, in particular those exhibited by individual plant species. It should be recognized that these responses are likely to vary considerably throughout the region depending on the degree of disturbance experienced.

Birds have exhibited some of the most conspicuous behaviours. Many species have changed their typically foraging behaviours and distribution in response to the sudden and almost complete loss of their preferred food resources. Birds commonly associated with the forest interior have been observed foraging along edges and even in urban gardens. The pressure to forage over larger areas has brought many birds into closer human contact. For cassowaries this has been particularly catastrophic with ten birds killed in the Mission Beach area since the cyclone. "A fed bird is a dead bird" is a truthful axiom, and the urge to hand feed birds should be ignored.

Surprisingly, arboreal leaf eating mammals appear to have survived the direct impact of Cyclone Larry but how they will persist over time is more uncertain with the forest stripped bare in many areas. All the possums, including Lemnroid, Green and Herbert River Ringtails and Striped Possums have been recorded in heavily damaged forests in the Maalan area in similar numbers to before the cyclone, and Tree-kangaroos have been observed in their usual haunts around Atherton. Like the birds, many mammal species are likely to be experiencing severe food shortages and are moving into human dwellings and gardens. The urge to hand feed these animals (however cute) should also be ignored.

The response by insects has been interesting. Stick insects and praying mantids disappeared overnight, and they remain absent in (damaged) lowland environments where they usually linger longer through winter. By comparison, populations of many flies and ants literally exploded, particularly the very small species. In the Palmerston area, the regular suite of night time autumn moths disappeared. One species from the family Noctuidae that has never been previously seen in the area has occurred in plague numbers.

Trees have also shown a range of responses to the cyclone. Some generalized observations are listed below (Table 1). Some species managed to withstand even the strongest winds. Tropical Ash (*Flindersia schottiana*) takes the prize as the most wind-resistant tree in north Qld. In Mission Beach, Innisfail and East Palmerston, we found this species to be the least affected (in Kris's words "they didn't lose a leaf!"). Other damage-resistant species are listed below (Table 2).

Table 1: Some generalized tree responses to Cyclone Larry

Local native species	See Table 2 below for examples	Better performed
Non-local natives	Tallow-wood, Southern Silky Oak	Many snapped
Exotic species (excl fruit trees)	Caribbean Pine	Poorly performed
Fast growing native species	Sarsaparilla, Wattle	Mostly snapped
Slow growing native species	Tulip Oak	Best performed

Table 2: Damage-resistant native tree species

SCIENTIFIC NAME	COMMON NAME	COMMENT
<i>Agathis robusta</i>	Kauri Pine	Young trees are susceptible; however old trees only lost occasional limbs. Exposed conditions increased threat
<i>Alstonia scholaris</i>	Milky Pine	Limbs may blow off however trunk is very sturdy
<i>Archontophoenix alexandrae</i>	Palms	All slender Palms are very tolerant of strong winds
<i>Argyrodendron spp.</i>	Tulip Oaks	Only limbs lost
<i>Barringtonia calyptrata</i>	Mango Pine	Good tolerance, quick respout of leaves
<i>Callistemon viminalis</i>	Red Bottle Brush	Moderately tolerant due to squat stature
<i>Calophyllum inophyllum</i>	Beach Touriga	Extremely tolerant
<i>Castanospermum australe</i>	Black Bean	Limbs may break however trunk is very stable
<i>Cordyline spp.</i>	Palm Lillies	Very tolerant of strong winds
<i>Crytharia hypospodia</i>	Northern Laurel	Minimal loss of foliage, branches or trunk
<i>Pythecia spp.</i>	Tree Ferns	fronds destroyed however trunk very tolerant
<i>Elaeocarpus angustifolius</i>	Blue Quandong	Some damage however main trunk persists
<i>Ficus virens, septica, congesta, hispida, microcarpa, drupacea</i>	Figs	Most Ficus are very sturdy
<i>Flindersia spp.</i>	Hickory & Maples	<i>F. schottiana</i> especially immune
<i>Glochidion sumatranum</i>	Umbrella Cheese Tree	Leaves shredded however most branches remain
<i>Nauclea orientalis</i>	Leichardt Tree	Limbs damaged however trunk persists well
<i>Pandanus spp.</i>	Pandanus	All Pandanus species tolerated cyclonic winds
<i>Schefflera actinophylla</i>	Umbrella Tree	Leaves blown off however stems are very flexible
<i>Scotopia braunii</i>	Flintwood	Minimal damage to foliage, branches or trunks
<i>Syzygium spp.</i>	Lillipilli / Satinash	<i>Syzygium</i> and <i>Acmena</i> genera showed tolerance of strong winds
<i>Terminalia catappa</i>	Sea Almond	Leaves are shredded however main trunks remain intact
<i>Xanthostemon chrysanthus</i>	Golden Penda	Very tolerant
<i>Xanthostemon whitei</i>	Hairy Penda	Very tolerant

The severe loss of canopy cover (e.g. forest cover along Suttles Gap Rd near Millaa Millaa declined from 92-96% to 30-50%) has significantly reduced the amount of light reaching the forest floor which is likely to have profound effects on many ecological processes, particularly the timing of flowering. Species such as *Brombya platyneura*, *Medicosa sessiliflora*, and *Pultea stutzeri* flowered very heavily suggesting their life history traits have been positively influenced by disturbance. Over the past two decades heavy flowerings have been recorded for the Hairy Penda which all corresponded with cyclone events (1986, 1997, 1998 and 1999). In other years flowerings have been very rare and small. This year, Hairy Penda produced one of the largest flowerings in memory; strongly suggesting that for this species cyclones are a welcome event. A possible explanation for this is that, when the Hairy Penda seeds fall next January the increased light levels in the forest would benefit the germination of its very small seeds which don't germinate within the shade of the forest.

The other clear effect was the heavy damage inflicted along forest edges and in large gaps. Wind penetration and resulting tree fall is always greater along forest edges compared to forest interiors. The cyclone has dramatically demonstrated this particularly around the edges of fragments that are surrounded by farmland. Likewise, narrow streambank plantings (e.g. 10-20 metres wide) have been more damaged than wider (e.g. 50 metres where there is lower ratio of 'edge' to 'interior' habitat. One of the biggest challenges will be to manage weeds within plantings and narrow fragments. Many smaller plantings will be overwhelmed unless landholders manage weed invasion.

The cyclone has clearly demonstrated that there are winners and losers. The unanswered question is whether or not this cyclone was the 'one every century' event, or whether it marks the wide) plantings, beginning of a period of more intense cyclone activity brought on by climate change as suggested by recent work by Professor John Nott from James Cook University. Records of cyclone activity obtained from bands laid down in stalagmites from Chilgaga caves covering the last 3500 years, suggest that we are overdue for an increase in cyclone activity. If severe cyclones occur more frequently, there are likely to be rapid and long-lasting changes in forest structure. Larger forest blocks may be more resilient to these changes than smaller forest remnants which is of particular concern for the management of endangered forest types such as the highly fragmented Mabi forests.

More immediately there is a need to ensure plantings near infrastructure such as electricity lines are more carefully considered by landholders. Thankfully the days of the Caribbean Pine and Tallow-woods on the Tablelands appear numbered and for this we should all be truly grateful.

People and Other News

by Barb Lanskey

JOAN & JAMES

Joan Wright has recovered well after the operation to repair her fractured hip at the beginning of February. She now uses her walking stick only occasionally, but says the accident has left her feeling weaker. Joan is still very busy with most of her activities, but has relinquished her position as Chair of TREAT's Environmental Benefit Fund. John Hall agreed to take on this responsibility and as John was instrumental in setting up the Fund, we're sure its management will be in good hands.

James has his 90th birthday on Friday 28th July, and we intend to celebrate it with a special cake at morning tea at the nursery. James was TREAT's first Treasurer and has been involved in TREAT's work since the beginning.

Joan's Book - Joan has kept a scrapbook recording the plantings and other events in the early years of TREAT, and last year she wrote her recollections of those days in the form of a book. I was eager to improve my typing skills on the laptop and found her tales of the early years fascinating. I was also amazed at the difference in a planting day then and now. Joan's book will be launched at TREAT's Annual General Meeting on 18th August, and copies will be freely available.

SIMON

Simon Burchill has been TREAT's Project Officer for the Peterson Creek Corridor Project since 2001. Living on the corridor at his parents' property, Simon has taken a keen interest in the project since its inception and has been our main source of information for researchers, visiting landcare coordinators and other VIPs. Simon has spent many hours showing visitors the plantings and has been part of the bird monitoring programme from the start. He has raised and planted thousands of trees on his parents' property, maintained under power lines and hauled masses of para grass from the creek.

Simon, however, has now taken a job in Mackay as Pest Management Project Officer for a couple of years. We wish him a bright future there and hope he enjoys his new job, but of course he will be sorely missed from TREAT.

Simon was also our website manager, but he intends to keep his finger on the pulse there - from Mackay.

POSSUM

Possum Rosser, like Tony Irvine, has been unable to attend most of the TREAT committee meetings due to ill health. Possum has lung cancer, but being the vibrant personality she is, had all her friends invited to a birthday party at her place on Saturday 24th June. Many of us from TREAT were there and we joked and laughed with Possum and enjoyed each other's company as intended. We all wish the best possible for Possum, and our thoughts are with Kevin and Megan too.

SCHOOL VISIT FROM NSW

Loreto Normanhurst, a Catholic girl's school in Sydney, will be bringing their year 9 students to North Qld for 2 weeks in July/August. As a community and environment engagement activity, the students will be coming to Lake Eacham to visit the nursery, view the Rainforest Display Centre and take a guided walk through the forest to the lake. TREAT volunteers from the TREAT on TAP programme will be on hand to take the students through these activities over 4 mornings. We involve primary school students in TREAT on TAP, but these students are much older and we are looking forward to interacting with them. This is the first visit to the north by the school, and if successful, it could become an annual event.

Tony Fruit Of The Month Thank-you

by Helen and Tony Irvine

Tony Irvine regrets he will be unable to write his Fruit of the Month column in the foreseeable future due to his health problems. Since having five vertebrae in his neck fused last September more of his spine has disintegrated and he faces further fusing of a couple more vertebrae within the next few months. Once he recovers from the spine operation, his hip prosthesis has to be repositioned and supported with bone grafts, after which he will be on crutches for two months. After that, hopefully, there will be only the Parkinson's to deal with.

Tony and I would like this opportunity to publicly thank all the wonderful people who turned up unasked offering to chainsaw and drag branches after Cyclone Larry's slaughter of our garden: Peter, Nick, Darren, Darryl, Merv, from National Parks, Amanda, Colin, Mariëka, Chris, and six students from School For Field Studies. David, Brett and Ralph from Kewarra and Thala Resorts. John Valenta, Dan Metcalfe, John Quadrio, Graham Lampert, Graham Bathe, Alan Gillanders, Jim Pacey, John Hill and Ed Bartlett.

We could not have coped without them and we feel humbled by their generosity.

As TREAT launches a book of its early years, we wish it a fruitful future.

What is TREAT Doing About Monitoring Water Quality?

by Noel Grundton

In the last newsletter (April- June), the article "What About Water Quality?" outlined TREAT's efforts to encourage its members, local landowners, and members of other treplanting groups on the Tablelands to become involved in documenting the effects of revegetation on water quality. Towards this end, TREAT organised a Water Quality Workshop, sponsored by the Bundaberg Rum Bushcare Fund, which had also provided funds for TREAT to purchase new water quality testing equipment - a turbidity sensor for *in situ* measurement of water turbidity, and a meter and sensor to measure soluble nitrate in water samples.

The Water Quality Workshop was a resounding success, due largely to the excellent cooperation received from our three lecturers from the State Department of Natural Resources, Mines and Water (DNR&M), and the wide ranging attendance that included TREAT members, staff from the School for Field Studies and QPWS, and coordinators of tableland treplanting groups, Conservation Volunteers Australia, and local landcare programs. The lecture part of the workshop was held in the Rainforest Display Centre (with the central display posters temporarily removed). After a welcome and introduction from TREAT President Barbara Lanskey, David Green from South Johnstone DNR&M presented the topic "Why Monitor Water Quality?". He left us in no doubt about the importance of documenting water quality. Besides helping us to understand what is happening in our local streams, the data collected could assist in understanding the wider picture. In Far North Queensland, this includes the effects of the many types of land uses on water quality, and the impact of water quality on the reef. David emphasized the need to establish baseline data (i.e. the existing water quality before any revegetation commences), and the need to monitor water quality over a long time to establish the effects of natural events. The 'take home messages' from David's talk could be summarised as:

- Yes, we should be monitoring water quality in local streams;
- We should be doing it before we commence any revegetation programs, to establish baseline data; and
- We should monitor it regularly and for a long time, if possible, to document the long-term effects of land use and any changes made in land use, such as revegetation.

But what should we measure? John Armour from Mareeba DNR&M introduced us to the "Chemical and Physical Aspects of Water Quality", and Michelle Pollard outlined the "Biological Aspects of Water Quality". John and Michelle listed many parameters that could be measured and noted aspects such as the level of accuracy to be achieved, and quality control, so that the collected data would be valuable and meaningful. Needless to say, some of us were blown away by prospects of how costly the exercise might become. For example, measuring chemical parameters could be done with hand-held portable meters costing hundreds of dollars, or laboratory machines costing millions of dollars with upwards to \$200 per sample to undertake a full analysis. Similarly, amateurs monitoring live specimens could do classification of macro-fauna such as insect-fauna such as invertebrates and fish, quickly and easily to family or even genus level, but identification to species level might require expert taxonomists working from preserved specimens with additional costs involved.

After morning tea, there was a practical demonstration using equipment from JCU, DNR&M, and TREAT. Handouts on water quality testing were available for workshop participants to take home. A discussion was initiated on the water quality parameters to be monitored in local streams, but most of us seemed to be so overwhelmed by all the information received that we could not get our teeth into the discussion and needed more time to assimilate the ideas supplied.

David, John and Michaelie left us their PowerPoint presentations and information on what can be measured, how and when to measure it, and quality control matters. TREAT has formed a working group to go over the information from the workshop, and recommend water quality documentation and monitoring protocols for TREAT projects. A follow-up from the water quality workshop will be held during the Lower Peterson Creek Field Day on the afternoon of 22nd July. At Frawley's Pool, TREAT will demonstrate the correct method of collecting samples from streams for offsite measurements, and the *in situ* use of some of its equipment for monitoring water quality.

Nursery News

by Nick Stevens

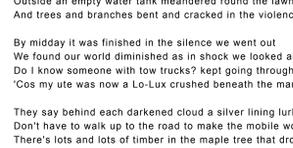
No doubt, most of you have probably spent a large portion of the last 3 months cleaning and straightening what Larry left behind, not to mention being hampered by the continuously damp conditions of a persistent wet season. Likewise QPWS staff had to deal with an additional workload that has sometimes seemed unsurmountable. The efforts of the many rangers, contractors and volunteers alike, involved in the cleanup work both in the community and on the National Park estate are to be commended.

There have been some expected implications for our regular work at the nursery; for starters you won't find a fruit collection diary in this issue as there has been virtually nothing to collect. This trend should not last long for many species and there have been some quite spectacular flowerings during May and June, in particular *Sloanea laingi* (White Carabeen), *Sloanea macbridei* (Northern Yellow Carabeen), *Syzygium cormiflorum* (Bumpy Satinash) and *Xanthostemon whitei* (Red Penda) were real standouts. Other setbacks have mostly concerned an inability to access project sites to complete regular maintenance tasks due to boggy conditions, as well as observing some extraordinary weed growth and having little opportunity to treat it.

Cassowary at Planting

by Barb Lanskey

Peter Dellow once told us about a planting down the coast where a cassowary came and checked out the newly planted trees, and now it's happened on the tableland at a planting at Pavan Sukhdev's place at Tarzali.



Pavan has been planting trees on his property for several years and TREAT members have been assisting him on organized planting days to extend revegetation on the banks of the Ithaca River. This year the planting continued the revegetation of a gully leading to the river. With the inclement weather, only a dozen of us came to assist Pavan's crew of four on 20th May, and we had quite a job ahead of us as there were about 2,000 trees to plant. The site preparation was excellent however, and the trees easy to plant, so in no time we were making quite a dent in the task.

TREAT was organising a barbecue for afterwards, and we saw Ken approaching down the hill to ascertain numbers and a time for cooking. He was with Trevor from next door and they were being followed by a shaggy dog - or was it? No, it was a cassowary!

It turned out that the cassowary was a regular visitor at Fur 'n Feathers and had even been given a name: "Quandong". He was 2 years old and "Toohey" was his dad, the dominant male in the area. Pete Snodgrass knew the young Quandong and said that he'd lost a lot of weight since the cyclone. He checked out my yellow raincoat on the ground, and found the young trees we'd planted had no fruit yet, so eventually he made his way through the barbed wire fence and found a few edible tidbits on the other side. Someone took a photo, and we later found a scat which Colin then offered to encourage some of the seeds in it to germinate.

The planting finished about 11.30am and then we had double the food to consume for our efforts at the very enjoyable barbeque.

Peterson Creek Field Day

by Barb Lanskey

After some miserable weather during the week, the afternoon of the Peterson Creek Field Day on 17th June, was fine with just a few light showers.

About 30 of us met at Palumbo's farm. There was a group of approx. 20 from the School for Field Studies and others came from Mareeba and Cairns. Simon Burchill, TREAT's project officer for the Peterson Creek, showed us an aerial map of the creek, linking the Lake Eacham national park to the Curtain Fig forest. He pointed out the plantings (totalling over 50,000 trees) which have been done since 1995. He then took us upstream to the 1998 planting, stopping at the cattle watering point to note some of the effects of the cyclone.

Further upstream we went into the planting to where there's been mammal monitoring in the past, and Simon also mentioned the bird monitoring that's been done at that site and along the creek. Lots of trees were sprouting new growth with the extra light levels and we were mindful of the many tree seedlings which would now compete for a place in the forest.

Retracing our steps and going downstream to the 2002 planting near some older hoop pines, Simon talked about the mix of pioneer and other tree species planted to form the corridor. Pioneers make up approx. 20% of the total species, and altogether over the years, up to 200 different tree species have been planted. Not all species are available each year.

At 3pm, we were keen to get into the physical part of the afternoon and for the next hour we cut and poisoned glycine which was quickly covering trees in an area near the 2002 planting. Some wild tobacco bushes were also demolished. We were glad to see lush new growth on many of the young trees.

Kay and Margret took home some appropriate cuttings of glycine for basket making, and we were quite amazed the following Friday morning when Kay produced a large handsome basket she'd crafted from the pieces. Everything has its use!

COMING EVENTS

Date	Event	Location
Saturday 22nd July 1:30pm	Lower Peterson Creek Field Day	Meet at Alumbah Pocket, Yungaburra
Friday 18th August 7:30pm	TREAT AGM	Community Hall Yungaburra
Saturday 23rd September 8:00am	Planting (approx 2000)	Peterson Creek off Pearamon Rd follow the TREAT signs

The Lower Peterson Creek Field Day will be held in conjunction with the Lower Peterson Creek landcare group. David Leech will lead us to describe the Tracey walk through recent plantings, down to Frawley's Pool where the group have constructed an interpretive shelter to describe the history and biological diversity of the creek below the highway bridge. Here TREAT will demonstrate some water quality sampling techniques. Afterwards there will be an afternoon tea provided, and we can socialise and simply enjoy the surroundings.

The planting in September at Peterson Creek will be to replace trees lost in this year's plantings to cyclone Larry and the subsequent weather. There may be as many as 2,000 and TREAT will provide a barbeque after the planting.

Owed to Larry

He came without a lot of warning, nasty piece of work
I woke up Monday morning and the world had gone berserk
No power (of course) to hear the news I opened up the door
And reached outside to find me shoes but they weren't there no more.

The rain came horizontal, bearing vegetation torn
I could see the garden pond all overflowing on me lawn
But above the rushing gutters roared a screaming, awesome sound
And me wife was heard to mutter I think Larry's come to town.

I closed the door and found the trannie; wife went back to bed
And I sat there like Orphan Annie arms wrapped round me head
The radio informed me often: "Category Five"
And I asked meself Is this his coffin? Will we get out alive?

I looked across the lawn to where me precious shed should be
But such a sight forlorn instead; a large and misplaced tree
Had fallen right across the roof and squashed it to the ground
It seems it wasn't maple-proof. Still, at least the house was sound.

For six long hours we stayed indoors no thought of going out
The wife lay huddled on the floor with blankets wrapped about
Outside an empty water tank meandered round the lawn
And trees and branches bent and cracked in the violence of the storm.

By midday it was finished in the silence we went out
We found our world diminished as in shock we looked about
Do I know someone with tow trucks? kept going through my head
"Cos my ute was now a Lo-Lux crushed beneath the mangled shed.

They say behind each darkened cloud a silver lining lurks
Don't have to walk up to the road to make the mobile work
There's lots and lots of timber in the maple tree that dropped
And I'm getting really timber, 'cos me chainsaw hasn't stopped.

A test of our endurance now we've only got one car
Thank God we've got insurance others suffered worse by far
The chooks have been evicted to make room for all me gear
Things have been a bit restricted since that Larry came round here.

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