

Wet Tropics a Critical Refuge for Australia's Rock Orchid

The Wet Tropics may become the last place in Queensland to see a native Rock Orchid growing in the wild, according to James Cook University research.

The genetic study of Australian Rock Orchids by PhD candidate Lalita Simpson was co-authored with her supervisors, Darren Crayn and Katharina Nargar at the Australian Tropical Herbarium, and Mark Clements at the Australian National Herbarium and has been published in the journal Molecular Phylogenetics and Evolution.

Ms Simpson said evidence from the genetic analysis had shown the orchid *Dendrobium speciosum*, which only occurs in Australia and previously had been thought to consist of up to 11 species, was in fact a single species with two subspecies, one northern and one southern.

"The study reconstructed the distribution of the Rock Orchid under past climatic conditions, which showed a large barrier of unsuitable habitat between Rockhampton and Mackay separated the northern and southern populations in the past," she said.

"This prevented the exchange of pollen and seeds and as a result two subspecies have evolved.

"We modelled the distribution of the Rock Orchid under different climate scenarios predicted for the future and found the northern subspecies which grows between Cooktown and Mackay will be the most severely impacted by climate change.

"With average global temperatures warming beyond a two degree increase we found that by 2080, those wanting to see the Rock Orchid's spectacular flowers in Queensland's bush would only be able to do so in the Wet Tropics.

"However, if warming was contained below a two degree increase, suitable habitat would be maintained in several regions along Queensland's east coast.

"The southern subspecies, which occurs between Rockhampton and the New South Wales and Victorian border, is not as greatly affected as its relatives in the north, although lowland populations along the coast are also threatened."

Australian Tropical Herbarium Director Professor Darren Crayn said the study showed how important climate change was for the evolution of biodiversity, both creating and extinguishing it.

"Ancient climate change drove the evolution of the two subspecies of Rock Orchids from their common ancestor, and now it looks like future climate change will reduce one of them to a small fraction of its current distribution," he said.

Dr Mark Clements said samples were collected from across the entire species range along the east coast of Australia and took more than 30 years to accumulate.

"The results resolve recent controversies regarding the best classification for this grand orchid which is one of Australia's truly iconic and recognisable indigenous orchids."

The Australian Tropical Herbarium is a joint venture between CSIRO, Australian and Queensland Governments and James Cook University. The Australian National Herbarium is part of the Centre for Australian National Biodiversity Research, a joint venture between Parks Australia's Australian National Botanic Gardens and CSIRO.



Dendrobium speciosum
Image courtesy Stuart Worboys



Caring for Kuranda's Environment
"by standing on the shoulders of those who've gone before"

Nursery: 284 Myola Road, Mon & Thur 9.00-1.00pm; Sat 10.00-noon; Phone: 4093 8989/4093 8393

Yellow Crazy Ants – Are they on the run ?

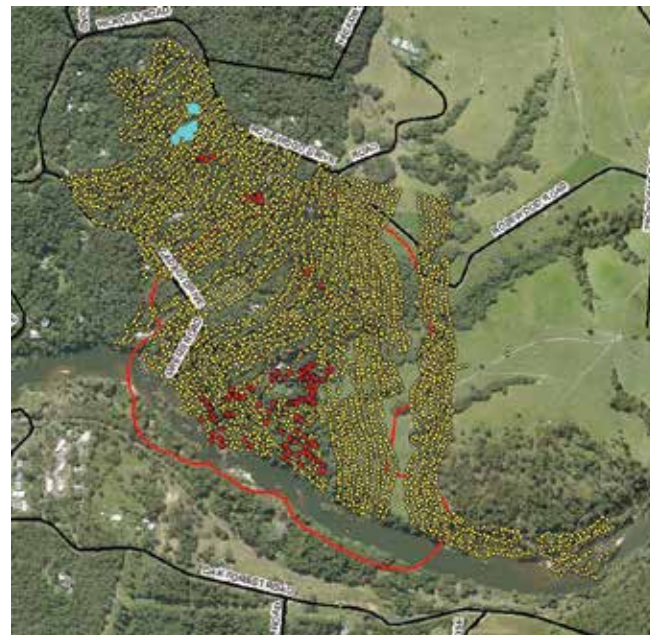
Lots of activity on the YCa eradication efforts in this last month.

BAITING. The most recent bait treatment on 18 November was completed in 2 days, with over 20 people attending and the 30 ha site was covered on foot. The Wet Tropics Management Authority YCa team joined in to support the taskforce by providing their expertise, materials, bait and extra people power. This will hopefully show a further decline in the remaining infested pockets. – **Next baiting April next year.** Below: YCA volunteers and WTMA crew enjoyed morning tea after baiting residential area



SURVEY – Great News!!!

An intensive 10m by 10m grid survey undertaken last month showed positive results with a huge decline in density of YCA. See map. Red dots are where ants are still present and yellow dots are where YCA are absent. The red line is the boundary including a 150m buffer zone. This has given us a clearer picture of where YCA remain and where we need to focus our efforts on targeting hotspots for future treatments after the wet season. We are closer to the point where we can enter post treatment observation for some parts of the currently treated infestation area.



Plant of the Month – *Alstonia scholaris*

Have you noticed there are many trees flowering and fruiting heavily at present. What does it mean I wonder – a good wet season, maybe the trees know something we don't ? All the way down the range road, there are rainforest giants flowering and fragrant blossoms scattered on the roadside. These



Alstonia scholaris, or Milky pines, are quick growing, tower over other rainforest trees, bearing long pods of seeds which burst during the wet season in a flurry of seeds like snowfall. Their shiny dark green leaves, grey green underneath, are distinctively whorled in sets of 4 to 10. Found also in India and South East Asia, timber is used for pencils and coffins and the bark has medicinal uses.



Date Claimers

- **XMAS party** 2nd December, BYO plate to share, a chair and swimmers, walk upstream of Little Road causeway, 4.00pm till dark. All welcome
 - **Saturday 9 December** Tropical tree community planting day. Another planting to enhance Myola frog creek habitat at Owen creek. Ring Sylvia 0409647714 or info@envirocare.org.au
 - Nursery closing Thursday 21st December. Re-opening 8th January
 - Frog Monitoring week 18th to 24th December – monitoring days vary. Check FB page or text Sylvia 0409 647 714 or Cathy on 0419 624 940
- Saturday morning Plantings 7:30 am-9:00am Meet at the nursery.**
Email info@envirocare.org.au for reminder or call Cathy on 0419 624 940

Become a member, borrow the Box Trailer: Ring Hans 4093 8393

Give a gift that keeps growing, through our local Grow Project.
www.envirocare.org.au info@envirocare.org.au

