

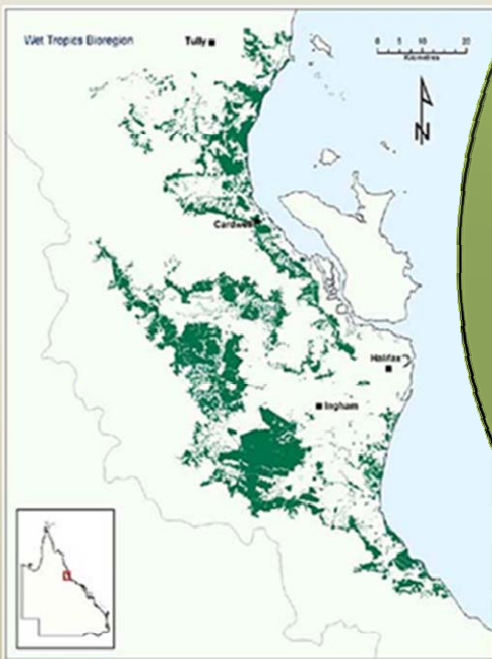
"Climate Change and Fire in the Queensland Wet Tropical Forests"

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RESEARCH AREA: Between Tully and Toomulla in North Queensland. The area affected by Cyclone Yasi, and the home range of the Mahogany Glider (*Petaurus gracilis*).

Map from DERM Webpage.



KEY Questions:

Are changing climatic conditions changing the rainforest edge?

Are more frequent severe cyclones like Yasi decreasing or increasing the area of rainforest?

Are Keystone species like the Mahogany Glider at risk from these extreme events?

How do we manage this and protect the ecotone?

KEY FINDINGS FROM THE LITERATURE REVIEW:

Previous research has shown that rainforest in north Queensland has expanded and contracted numerous times over millions of years. More recently, the rainforests expanded when the sea levels rose around 2 metres or more about 6000-8000 years ago. The result was that the rainforests expanded. Research from Lynch's Crater on the Atherton Tablelands in the North Queensland Wet Tropics, has shown that a climate change event around 6000 BC resulted in increased wet equatorial rainfall in North Eastern Australia (Muller *et al* 2008), and more rainforest. The results have indicated an event that may have propagated the Inter-Tropical Convergence Zone further south deep into northern Australia. **THIS IS THE MOST LIKELY EFFECT OF GLOBAL WARMING ON THE RESEARCH AREA.**

Mahogany Glider habitat, changes to forests after severe cyclones, and the possible resultant changing fire patterns.

The Mahogany Glider lives in Swamp forests and sclerophyll forests that adjoin the lowland rainforests. After Cyclone Yasi large areas of rainforest and sclerophyll forests were damaged. Many habitat trees were destroyed.

THE KEY QUESTIONS NOW ARE:

Will the damaged rainforest be a fire risk in the dry season? Will the rainforest start invading the sclerophyll areas? What fire management will be needed in the sclerophyll forest? Specifically, what tests or fieldwork can we do to determine how the rainforest-open forest edge will change?