



National Environmental
Research Program

TROPICAL ECOSYSTEMS *hub*

Maintaining rainforest values

Project 7.1: Fire & rainforests

Mabi forest & Mahogany Glider habitat

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Rainforest Research Informing Wet Tropics Management



CONTEXT

Research Priority - Protecting our biodiversity and heritage

Wet Tropics – fire misunderstood, feared, ignored, avoided, prevented

Growing national dialogue about the benefits of fire

Recognition of the critical nature of Indigenous fire management

Technology developed to model fire in the lab





BACKGROUND

- Fire is a natural modifier of vegetation composition, structure and distribution
- Fire has been used as a management tool by indigenous people for 000's of years
- Fire regimes changed under European management approaches
- Fire a threatening process; absence of fire is also a threatening process





RELEVANCE OF WORK

- Fire is a management tool required to maintain ecosystem health within the Wet Tropics landscape
- Require empirical evidence to support policy and management strategies around application or exclusion of fire
- Climate change scenarios suggest that fire is likely to be a significant contributor to landscape transformation, as the driver of community change following drought or cyclones





CASE STUDY – MAHOGANY GLIDER



2011



2013



2014

Absence of fire allows rainforest to invade habitat – key threatening process for mahogany gliders



CASE STUDY – MAHOGANY GLIDER

- fire changes recruitment and survival patterns of rainforest and woodland species (61 spp resprout, 31 families, 80% rainforest)
- invasions < 5 years old reversed with fire
- invasions > 10 years old require very high fire intensities – has management implications for burn frequency and intensity





CASE STUDY – MABI FOREST

- seasonally dry forest types may support litter fires in exceptionally dry years
- such fires may be important in weed control and promoting tree recruitment
- climate change scenarios suggest increases in fire frequency, how do we manage this for the community and its threatened species?





CASE STUDY – MABI FOREST





APPLICATION OF WORK

- Recognise the importance of fire in Wet Tropics landscape, both as a positive and negative influence
- Suggest appropriate fire regimes for different vegetation types
- Incorporate traditional ecological knowledge into management understanding of the role of fire
- Provide empirical data to underpin policy decisions and management strategies
- Inform the discussion about how future climate scenarios will change management imperatives



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Rainforest Aboriginal People's Alliance

Girringun Community

Tableland Yidinji People & Ngadjon-Jii People

Wet Tropics Management Authority

