



## Project 7.1: Fire & rainforests

- 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, and the landscape is changing as a consequence
- Fire is a management tool required to maintain ecosystem health within the Wet Tropics landscape
- We require empirical evidence to support policy and management strategies around the application or exclusion of fire
- Climate change scenarios suggest that fire is likely to be a significant contributor to landscape transformation in the future



### Mahogany glider habitat

- absence of fire allows rainforest to invade
- invaded woodlands do not support viable Mahogany Glider populations
- invasions < 5 years old reversed with fire
- invasions > 10 years old require very high fire intensities fire changes recruitment and survival patterns
- cyclones may facilitate rainforest invasion, but post-cyclone fire may also threaten gliders



### Mabi rainforest

- seasonally dry forest types may support litter fires in exceptionally dry years
- such fires may be important in weed control and promoting tree recruitment
- off-site experimental combustion will determine conditions under which fire possible
- microclimatalogical data will indicate frequency of such events
- climate change scenarios suggest increases?



### Littoral rainforest

- fire is a significant threat to persistence
- weed invasion, fire in adjacent communities and agricultural/urban environments pose risk
- pilot study mapping littoral rainforest extent, condition and threats
- work with agencies, community and traditional owner groups to improve management and protection



### Applications and future directions

- help to recognise the importance of fire in Wet Tropics landscape, both as a positive and negative influence
- have to incorporate TEK into fire management
- need to suggest appropriate fire regimes for different vegetation types and landscape contexts
- will provide empirical data to underpin policy decisions and management strategies
- can inform the discussion about how future climate scenarios will change management imperatives through providing improved understanding of fire in a transitional and potentially transformative role in Wet Tropics landscapes



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