bushfire&natural HAZARDSCRC

BUILDING COMMUNITY RESILIENCE IN NORTHERN AUSTRALIA

Scoping remote community resilience, building better governance, finding new opportunities to grow resilience

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THE NORTH AUSTRALIAN BNH CONTEXT

360,000 People
+ Communities from ‘outer regional’ to ‘very remote’.
+ Remote communities mostly inhabited by indigenous Australians (% rises with remoteness)
+ Poor infrastructure
+ Disconnect with emergency management paradigm
+ Poor infrastructure
+ Low population densities
+ Poor communications
+ Low levels of formal education and training
+ Limited labour market experience
+ Poor health

} The "Gap"

= Almost no formal emergency management capacity
= No spare capacity to fall back on
= No “Plan B”
= Very limited community resilience

NORTH AUSTRALIAN BNH

An annual cycle

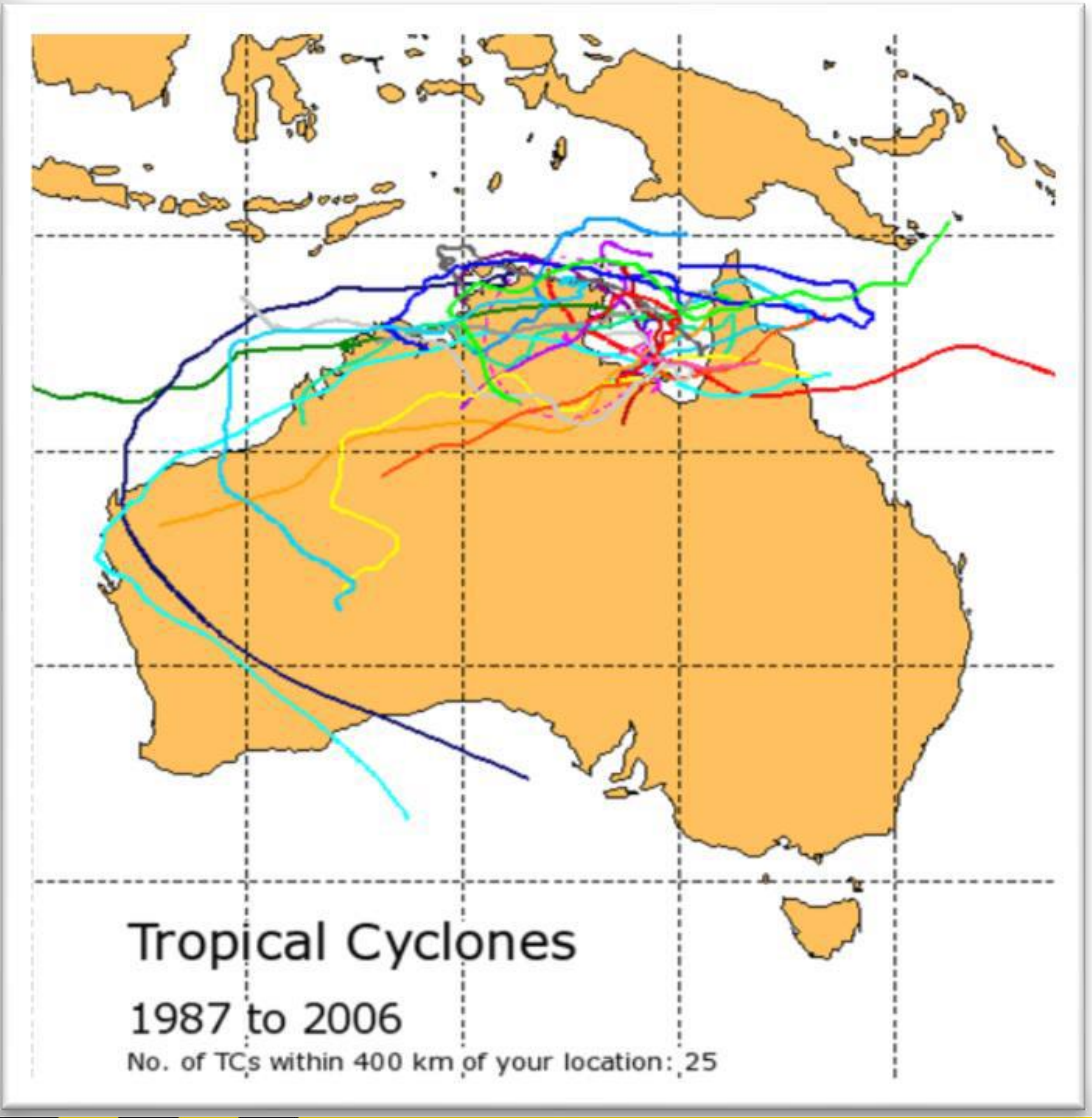
a) Cyclones

b) Floods

c) Fire
- 430,000km^2 burnt in north Australia annually
- Impacts on Community Safety, assets, major contributor to greenhouse emissions, biodiversity, water and air quality, cultural practices, tourism and agriculture

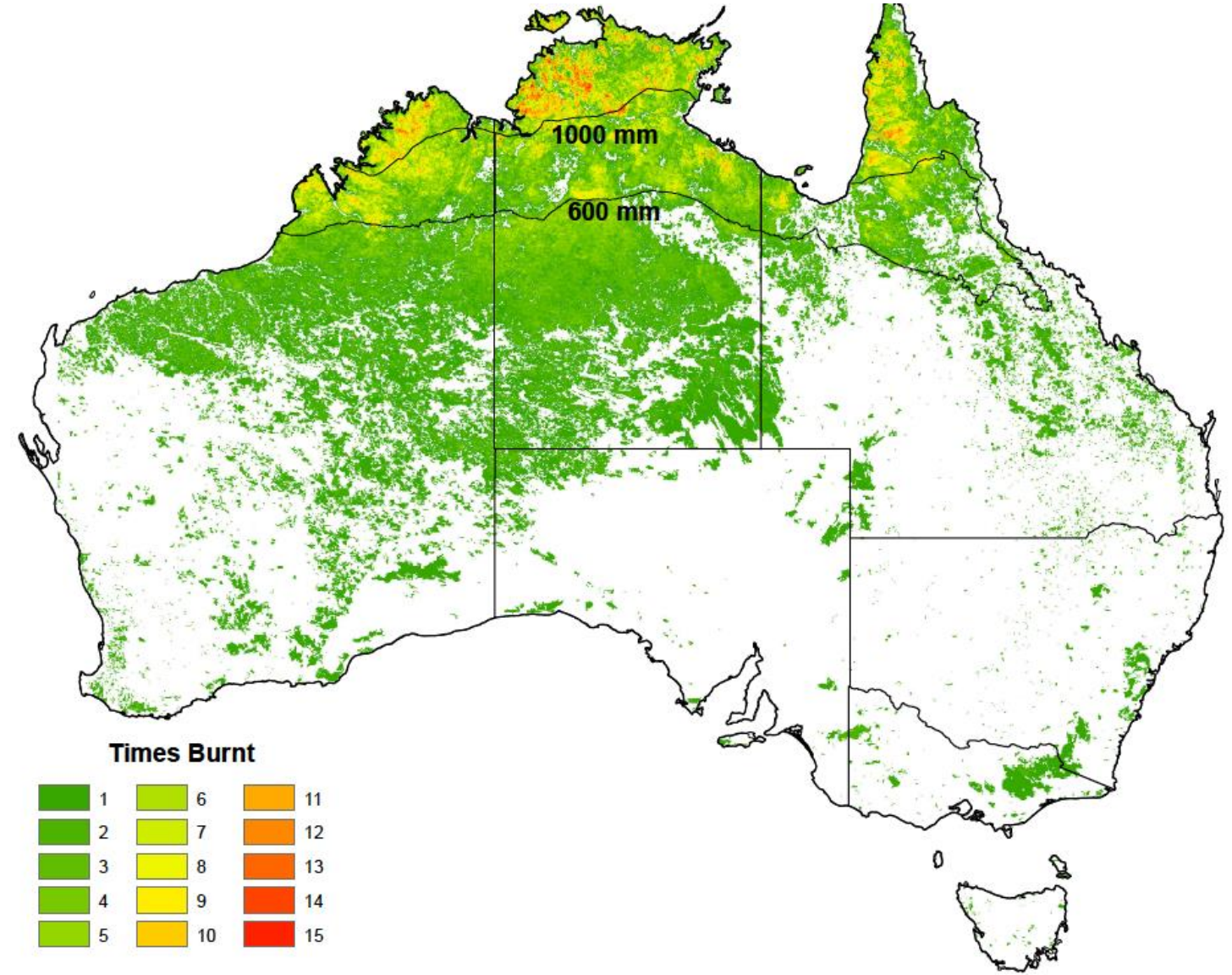
d) Government

CYCLONE TRACKS OVER ARNHEM LAND



- 25 cyclones affecting Arnhem Land over a 20 year period 1987-2006
- 2 so far this wet season
- Communities perceive that impacts on remote Indigenous communities not taken seriously compared with e.g. Queensland coast

Fire frequency 1997 – 2011



FIRE MANAGEMENT FOR NORTHERN AUSTRALIA

Landscape Scale Risk Assessment

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bnhcrc.com.au

BUSHFIRE MANAGEMENT - OPPORTUNITIES FOR BUILDING REMOTE COMMUNITY RESILIENCE

1) Objective:

Provide robust decision support information and tools to help turn recurrent fire management problems where feasible into sustainable land management solutions.

3 Key Component Projects:

1) ***Savanna Fire Management***
2) ***Management of flammable high biomass grassy weeds***
3) ***Fire management and enterprise opportunities in the NT / QLD Gulf region***

Direct links to north Australian resilience and PES projects

KEY PERSONNEL & STAKEHOLDERS

Researchers

Prof Jeremy Russell-Smith, DCBR / RIEL, CDU

Peter Yu, Chair, North Australian Indigenous Land & Sea Management Alliance Ltd (NAILSMA) & colleagues

Dr Andrew Edwards, DCBR / RIEL, CDU

Dr Samantha Setterfield & Dr Natalie Rossiter-Rachor, RIEL, CDU

Cluster Lead End User

Naomi Stephens, Dept Environment, NSW Government

Lead End User for the Northern Hub:

Steve Rothwell, Chief Fire Officer/Director, NT Fire and Rescue Service

SAVANNA FIRE MANAGEMENT

1) Objectives:

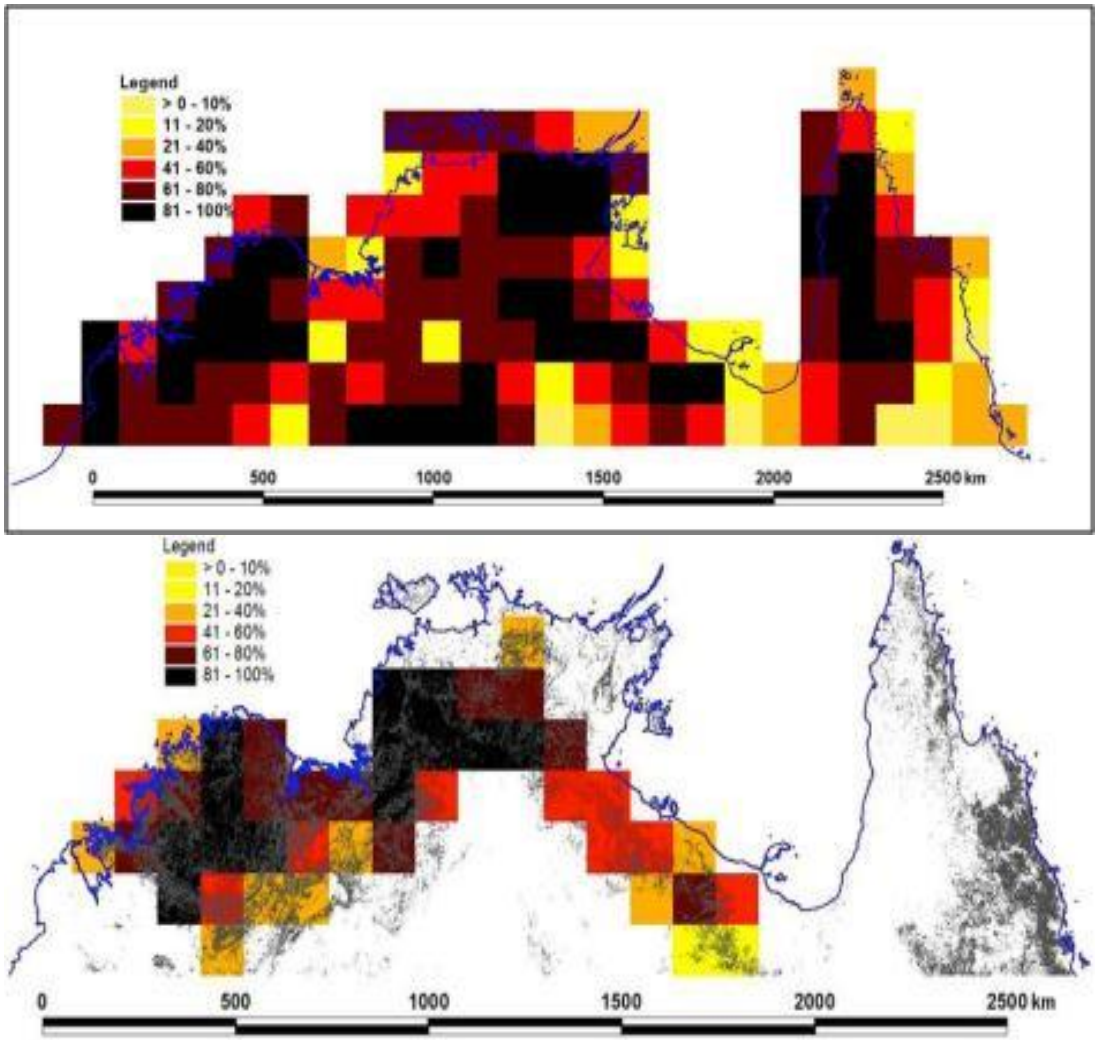
- Broad-scale bushfire risk assessments in previously determined high risk regions using higher resolution spatial analyses
- Assess the utility and efficacy of implementing savanna-wide fire severity / fire regime metric
- Develop an algorithm to provide fire managers with mapping describing the potential risk of the occurrence of fire

Extrapolation of risk models to savanna-wide scale, 1997-2011

Proportion of respective one degree cells:

(a) affected by 3 or more Late Dry Season fires…e.g. *Callitris* stands

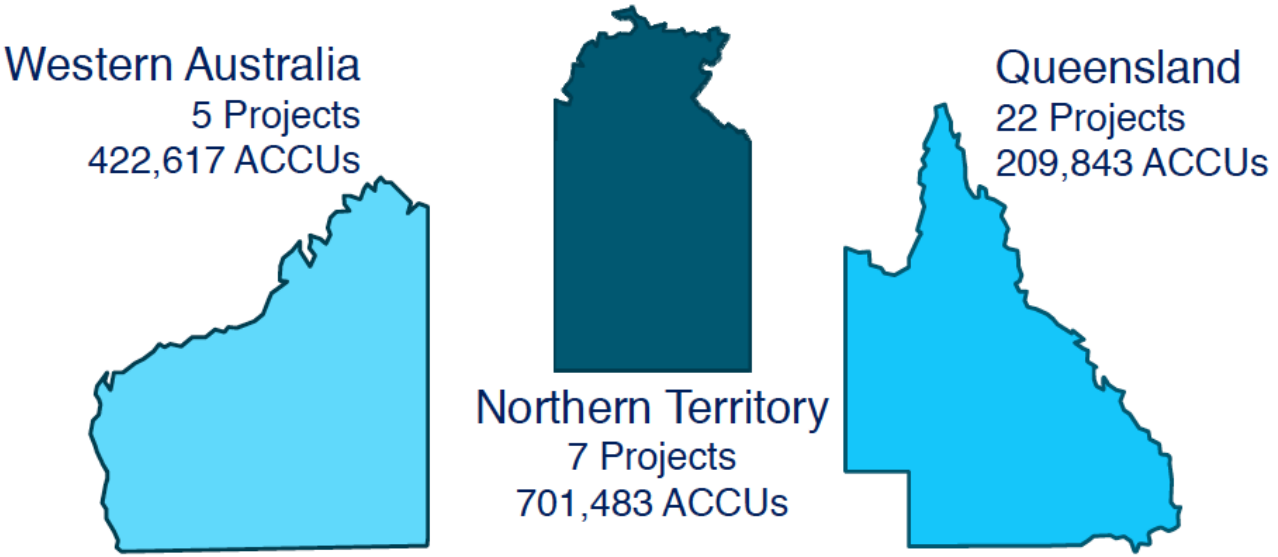
(b) In topographically rugged landscapes (indicated in grey) affected by 4 or fires…e.g. sandstone heaths



Carbon credits earned from Savanna burning projects, as at March 2015

Note: 1 carbon credit = 1 t.CO2e = AUD15 (as of May 2015)

Current savanna burning projects



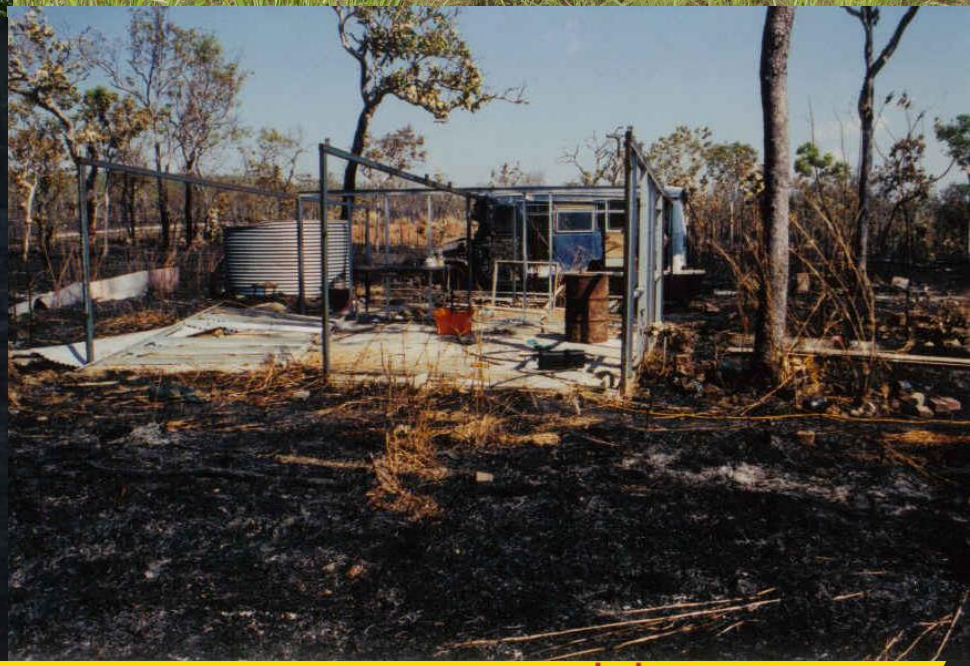
1,333,943 ACCUs issued for 34 projects

MANAGEMENT OF FLAMMABLE HIGH BIOMASS GRASSY WEEDS

Objectives

- Assess the likelihood, magnitude and distribution of risk of high biomass invasive grasses to fire regimes in the tropical savanna region

- Provide critical information for Government policy and planning, particularly prioritisation of weed risk for fire-regime changing species, and for fire management planning



FIRE MANAGEMENT OPPORTUNITIES IN THE NT / QLD GULF REGION

Objectives

- Provide a sustainable basis for developing stronger and more resilient communities by:

- Addressing improved fire management in the Gulf region through the development and application of approved Carbon Farming methodologies

- Providing an economic and employment foundation for remote Gulf communities derived from and building land management enterprises / undertakings

SCOPING COMMUNITY RESILIENCE IN NORTHERN AUSTRALIA

Revealing complexity through action research

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BUILDING COMMUNITY RESILIENCE IN NORTHERN AUSTRALIA

Objectives

1) Articulating key BNH challenges facing Indigenous people and local communities in north Australian and adjacent savanna regions

2) Exploring opportunities through emerging economies related to climate change mitigation, carbon trading, and ecosystem services

3) Rigorous valuation of potential Ecosystem Services (ES) and associated scenario modelling of Payment for Environmental Service (PES) benefits from emerging land-use options (e.g. savanna burning, carbon sequestration and environmental stewardship arrangements)

4) Identifying beneficial culturally appropriate institutional and governance arrangements

5) Providing authoritative analysis to help inform relevant policies

KEY PERSONNEL & STAKEHOLDERS

Researchers

Prof Jeremy Russell-Smith, DCBR / RIEL, CDU

Prof Bob Costanza, Crawford School of Public Policy, ANU

Mr Peter Yu, Chair, North Australian Indigenous Land & Sea Management Alliance Ltd (NAILSMA) & colleagues

Dr Kamal Sangha, DCBR / RIEL, CDU

Aboriginal Research Practitioner Network (ARPNet members)

Prof Andrew Campbell, DCBR / RIEL, CDU

Cluster Lead End User

Suellen Flint, Director Community Engagement, FESA (WA)

Lead End User for the Northern Hub:

Steve Rothwell, Chief Fire Officer/Director, NT Fire and Rescue Service

ARPNet researchers undertaking preliminary assessments (scoping study)

2 teams of community-based indigenous researchers have been trained in Ngukurr and Gunbalanya [16 community based practitioners from ARPNet]

NGUKURR

(on Roper River 300km south-west of Katherine, NT)

GUNBALANYA (Oenpelli)

DELIVERABLES

Phase 1 (Years 1-4) project outputs:

1)annual workshops, towards the development of

2)a major book (realistically Year 5)
(indicative title: *Community Development and Resilience: A reimagined future for north Australian Indigenous Lands and Seas*), and

3)≥ 1 refereed journal paper in Years 2 and 3