RISKS AND OPPORTUNITIES FOR SUSTAINABLE SAVANNA FIRE MANAGEMENT

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CDU ‘NORTHERN HUB’ PROJECTS

1) Savanna fire management
   • Savanna burning tools
   • Management of flammable high biomass grassy weeds
   • Gulf (NT) community fire management

2) Scoping community resilience in remote communities
   • Assessing community resilience
   • Assessing effective community governance
   • Payments for environmental services (PES) opportunities

3) Appropriate fire management training for remote communities
CDU 'Northern Hub' Projects: Overarching Objectives

1) Improved understanding of issues affecting resilience in remote north Australian communities

1) Assessment and development of PES enterprise opportunities for remote communities (e.g. savanna burning markets; contract services)

1) Better understanding of natural hazard risks, especially in context of impacts on community resilience

2) Development of information tools and training to assist development of enterprise opportunities and community resilience
SAVANNA FIRE MANAGEMENT PROJECT: CURRENT PROJECT TEAM

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<th>Role</th>
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A) SAVANNA FIRE MANAGEMENT TOOLS
ANDREW EDWARDS
Fire Severity 2014

Fire Effect
- severe
- not-severe
SAVANNA FIRE MANAGEMENT: MODEL

Greenhouse Gas Emissions (t.CO$_2$-e.yr$^{-1}$)


SAVANNA FIRE MANAGEMENT: MODEL

Tree Carbon Sequestration (Mt.C.yr\(^{-1}\))


Savanna burning climatic envelope
NAFI SavBAT tool for calculating GHG emissions
LiDAR measures the distance from the sensor to a target, determined by timing the round-trip travel time of a pulse of laser using the speed of light.
B) HIGH BIOMASS GRASSY WEEDS
SAMANTHA SETTERFIELD & NATALIE ROSSITER-RACHOR

1) Grassy weeds spreading rapidly

2) Invading range of ecosystems
   – Savanna, riparian, wetlands

3) Driving large changes in fire regimes (esp frequency & intensity)

4) Significant consequences
   – Ecological, economic, social
Grassy weeds increase fire risk

1) Major risk to:
   - Human Life,
   - Infrastructure
   - Tourism
   - Environmental assets
   - Cultural assets

2) Risk will vary with grassy weed species (fuel load, fuel continuity, distribution)

3) Currently not being managed strategically

4) Lack of decision support tools/models to inform management
Aims of project

1. Assess the risk
   - Likelihood, magnitude & distribution of risk of grassy weeds to fire regimes in tropical savannas

2. Provide information for policy/planning
   - Prioritisation of weed risk for fire management planning
Outputs

1) Maps of altered fire risk
   - Current/potential distribution of grassy weeds
   - Current areas of altered fire severity risk
   - Predicted areas of greatest risk

2) Case studies of spatially-explicit risk assessment to inform strategic management
   - Assessment of fire risk to community, pastoral & environmental assets
   - Costs & types of management actions to reduce risk
   - Decision support tools (Benefit/costs of risk reduction)

3) Prioritisation framework for risk management
C) NT GULF FIRE MANAGEMENT PROJECT
INCLUDING KATE VAN WEZEL’S PHD PROJECT

Working with Indigenous community ranger program and regional stakeholders to build:

• operational fire management capacity

• appropriate formal governance arrangements (i.e. combining traditional and enterprise/ regulatory requirements)

• PES opportunities, starting with C market
5 Indigenous peoples involved in the action research project

7 Aboriginal Land Trusts

Land area: 30,000 square kilometres
CDU ‘Northern Hub’ Projects: Current Challenges

1) Developing a better understanding of governance needs across north Australian remote communities

1) Building better linkages with the Emergency Management community & agencies—especially QLD

1) Exploring emerging opportunities and synergies with the ‘northern Australia development’ agenda (e.g. the “Northern Development CRC”)

2) Consolidating project activities with the publication of a book, A sustainable future for northern Australia, due 2017
CDU ‘NORTHERN HUB’ PROJECTS: CURRENT CHALLENGES

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