

## **Exploring Aboriginal Fire-Management Techniques in the Australian Savannah**

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**Introduction:**

The Australian Savannah is the most fire-prone environment in the world (Russell-Smith et al. 2013). The research conducted by John Russell-Smith and his team was used to test the hypothesis of whether traditional aboriginal fire management techniques would create a more positive outcome on greenhouse gas emissions produced by wildfires in relation to other fire management techniques (2013). The study aimed to test the method of lighting small fires throughout the Savannah to promote new plant growth and prevent mass wildfires in the dry climates (Russell-Smith et al. 2013). This method has been used by the aboriginal people of northern Australia for thousands of generations (Russell-Smith et al. 2013).

**Methods:**

The researchers used a method of early dry-season burning where the Savannah's forest floor is burned early on to promote new growth and less wildfires (Russell-Smith et al. 2013). They used independent variables of amount of land burnt and rainfall in relation to dependent variables of carbon emissions produced by the Savannah wildfires (Russell-Smith et al. 2013). The study also used a baseline of the previous 10 years of carbon emission measurements to compare the study results to. Over a 7-year period, the research team analyzed carbon emission rates and compared them to the pre-project baseline (Russell-Smith et al. 2013). Because this study is so large, the study design is adequate when concerned with such a specific environment.

**Results:**

When compared to the previous 10 years, the 7-year study saw a significant decrease in carbon emissions when the aboriginal fire-management methods were used (Russell-Smith et al. 2013). The area of land burned throughout the year also saw a significant decrease (Russell-Smith et al. 2013). The study proved the hypothesis that the aboriginal fire-management methods would decrease overall carbon emissions caused by wildfires (Russell-Smith et al. 2013). These methods also prevented large wildfires by promoting healthy new growth of wild plants (Russell-Smith et al. 2013).

**Discussion:**

Overall, the study promoted new firefighting techniques that offset the Australian carbon emissions by over 100 000 tons per year (Russell-Smith et al. 2013). The conclusions made through this study are justified, however, the carbon emission rate could be influenced by outside forces such as emissions from factories and/or motor vehicles. These conclusions however are average through all related studies because there are not very many ways to measure the effects of wildfires other than through emissions and land burned. This article supports our team topic because it shows the evidence of exactly how the aboriginal fire-management technique compares to modern firefighting techniques.

**Vocabulary:**

Back-burning- The Australian aboriginal burning technique of starting small fires in front of a firebreak or a main wildfire.

Biomass stocks- Stocks involved with using biological matter as a form of energy.

Biosequestration- The capture and storage of greenhouse gases.

Firebreak- A strip of bare land preventing fire spread.

Methodology- Specific methods used in a specific study or topic area.

Pastoral land- Land used for livestock or farming.

Pyrolized [sic]- Composting waste using extreme temperatures.

Tenure- Rules regarding how a building or property can be occupied and held.

Watercourse- A natural or artificial path of water flow.

## References

Russell-Smith J, Cook GD, Cooke PM, Edwards AC, Lendrum M, Meyer C, Whitehead PJ.  
2013. Managing fire regimes in north Australian savannas: applying Aboriginal  
approaches to contemporary global problems. *Frontiers in Ecol and the Environ.* 11(s1).  
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