



Prize Winner

Science Writing Year 5-6

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First Nation Science: Fighting fire with Fire

By Apala Thakor Dhadoo

“Karri¹, do you smell that **smoke**?” questioned Alinta² as she sniffed the **ashy** air.

“ahhh....wwwn, let me sleep, Alinta” Karri replied rubbing her eyes.
“But what’s that **smell**?” Karri coughed.

The twins walked out of the humpy³ and saw their dad, Jarli⁴, walking with a **fire stick** and setting a few **bushes** on **fire**. The **fire** was small but **burning** bushes down to nothing, and filling air with **white smoke**. The **smoky** feeling of the place worried Alinta and Karri.

“Dad! What are you doing? Why are you **burning** all the **bushes**?” Alinta called as the sisters ran to Jarli.

“We could get trapped in this **fire**!” Karri gasped with apprehension.

“Our **mother land** is **sick**. We need to **heal** her. This is our **culture**” Jarli explained.

“**Healing** by **burning** our mother land?” they asked perplexed.

“Yes dear, **fire** and our mother land are **knitted** together. This **fire** keeps our land **healthy** and **protects** her from **natural disasters** like **bushfires**.” said Jarli

“Do you mean fight **fire** with **fire**? How does that work?” Alinta asked.

“What do you need to **set** a **fire**?” prompted Jarli smiling.

“**Oxygen, air** and **fuel**.” Karri answered in a flash.

¹ Karri: Eucalyptus Tree

² Alinta: Flame

³ Humpy: a small, temporary shelter, traditionally used by Australian Aboriginal people

⁴ Jarli: ‘barn owl’ who holds secrets and sacred knowledge

“That’s right and we have all three on our land in **abundance**. Our land gets too **hot** during summer, and all **weeds** and **bushes** dry out and work as **fine fuel**. We have **dry lightning** and extreme **sun heat** that works as flame. The howling winds add **oxygen**, and our mother land is set on **fire**. On top of that the eucalyptus forest provides **heavy fuel** for the **fire** to go **wild**.” Jarli explained.

“Yes, I remember how the **Black Summer Forest Fires of 2019–2020** burnt more than **16 million hectares of land** and damaged **thousands of buildings**. Do you know more than **100 threatened animals and plant species** were affected and some of them were pushed to **extinction**?” Alinta scowled sadly.

“Yes, we have many native species that have become **extinct** from our **ecosystem** due to **bushfires**. But what if one of the these (**Oxygen, Heat, or fuel**) is removed?” Jarli asked.

“Then it wouldn’t work. You need all three to set a **fire**,” Karri replied

“Yes. They are a ‘**Fire Trio**’. If any of them is removed a **fire** wouldn’t continue. That’s the way our **cultural burning** works. When we set a cultural fire at the **start of summer**, we **burn down** all little bushes that is **fine fuel**. If there aren’t many bushes to catch fire later in the dry season, **bushfires** would be controlled.

“But **bushfires** also burn the bushes. So, what’s the **difference**?” Alinta questioned.

“It’s different. It’s about setting the **right fire** at the **right place** and at the **right time**. Cultural burning is a **cool burn**. We **burn** grass, leaf litter and shrubs in **small patches** at **low temperature** and **slow speed** with a maximum **flame height** up to knees. So, it would not **ignite** the oil in Eucalyptus trees and **preserves** the sacred tree canopy. It is not **fatal** like **natural bushfires** which significantly **burn trees** and all **vegetation**. Our

cultural burning **doesn't bake** the **seeds and nutrients** in the soil or destroy **root systems**. Further, cultural burning **improves soils** and enables them to **hold more moisture**. Altogether the cool burn **rejuvenates** ageing vegetation, **stimulate** flowering and seeding and **provide** new green shoots and herbs for grazing animals. It also **controls** the density of **African gamba grass, Bracken Fern and Casuarina** that leads to **increased fuel load**. It's all about **regeneration** and **restoring** the **balance of species** and **ecosystem**" Jarli elucidated.

"But dad, what about the **animals**! They will be **frightened** with this fire. Look, how these ants are **running** into their **nests**." Karri cried.

"Don't worry honey, animals know how to **protect** themselves from **fire**. Plus, the **flame** doesn't move too **quick**, giving animals time to **flee or burrow**. The **logs** on the ground or **trees** don't burn in this fire so their **habitats** are safe too! There will be **some insects** burnt but **Brolgas** will eat them, it's a normal **food chain**." Jarli assured smilingly.

"Now it's time for me to **walk with this fire** so I can keep it under **control**. You girls go back to humpy." Jarli added.

"But this **fire**... how long that will go on for?" Alinta asked

"It will **extinguish** on its own by evening and **stop** spreading, **dew** will help for any remaining **flame**." Jarli informed as he walked away with fire.

Within a few days of fire, Alinta and Karri enjoyed watching the **mosaics** created by the fire, fresh green **shoots sprouting**, **wallabies bathing** in the **cool ash** to **cleanse** themselves from **lice**.

"Let's **rub** this **ash** on our bodies and **connect** with our **mother land**." Jarli said and they set on their journey of **healing the other part of land** while singing Michele Hetherington's Poem:

“If you forget me, I will remind you.

With **flame** I will **light** up the land.

I will stop the **rain** and turn the fields to **dust**.

I will close your borders with **flooding rivers**.

Remember you are here because I **exist**.

I am the **land**, you are the **people**,

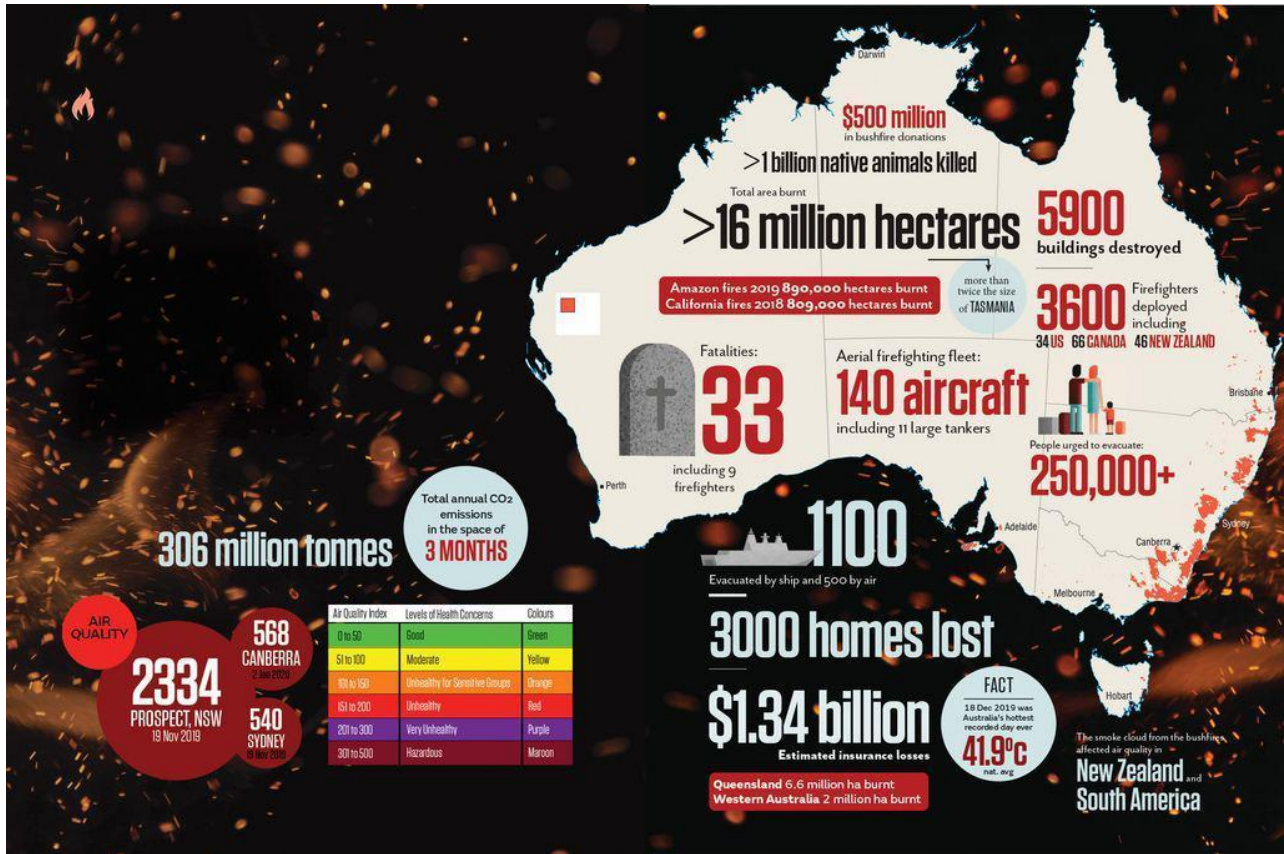
Together we are **one**.”

Word count without Poem: 836

Word count with Poem: 890

Appendices:

Appendix 1: The black summer statistics



Appendix 2: Fire Triangle



Appendix 3: Fire triangle experiment conducted at home with mum's help with removing one of the trio at a time.



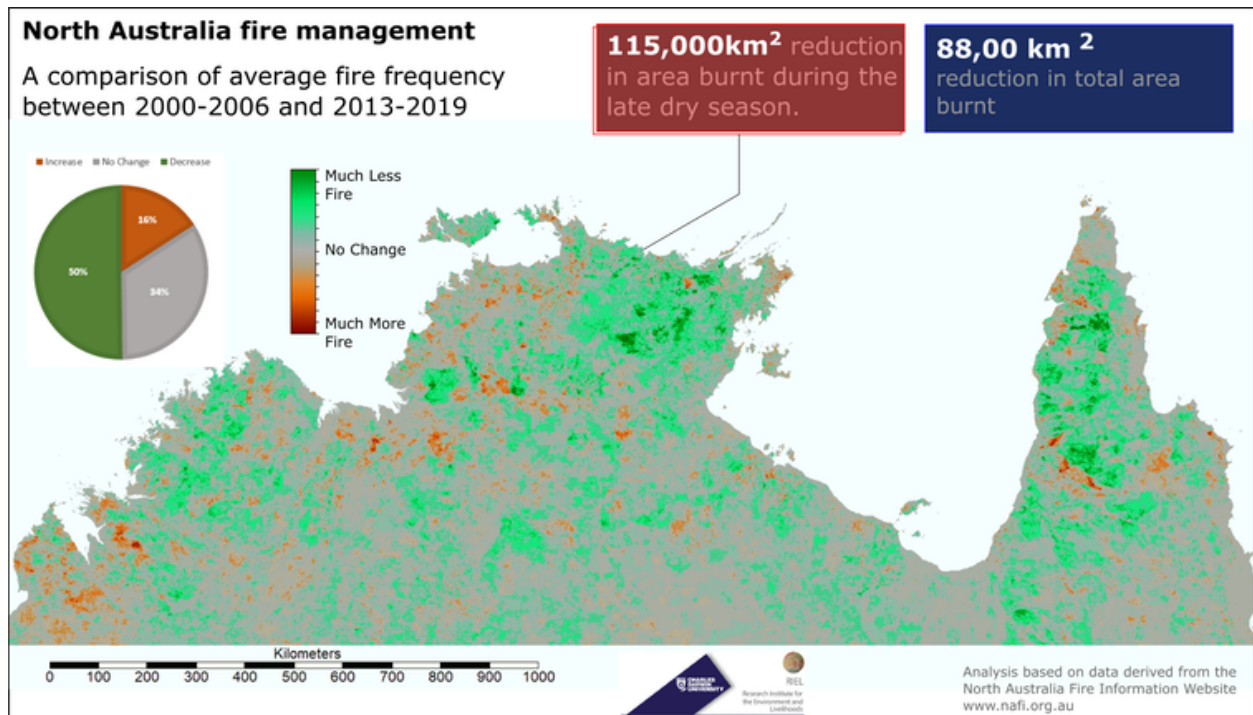


No Heat/flame

No Fuel

No Oxygen

Appendix 4: Fire management through cultural burning in Northern Australia effects



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