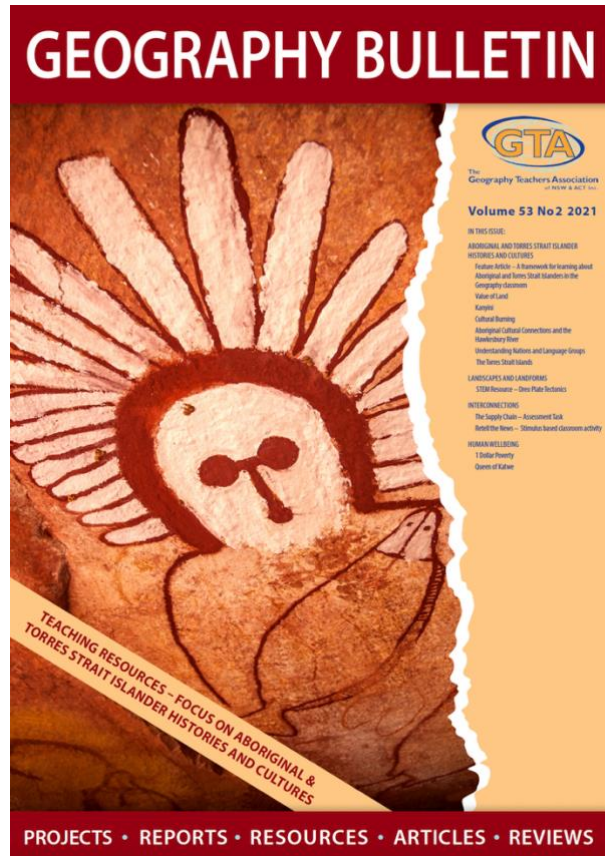


2021 Volume 53 No 2 Appendices 1 – 4



1. Guided reading
2. Interconnections Assessment Task (Workbook is separate)

NOTE: These appendices are to be printed in A3 format.

5 Question. How do cool burns benefit plants?

6 Question. What does 'self extinguishing' mean?

10 Question. What signals tell Aboriginal people it is time to burn?

By Lorraine Chaffer for GTANSW & ACT

1 Question. How is fire used as a tool?

2 Question. Give an example of the spiritual importance of fire.

3 Question. What is the impact of an 'out of control' bushfire?

4 Question. State two features of cultural burning fires.

Cool burns: Key to Aboriginal fire management 1

Read why cool fires are key to managing the land and why the canopy is sacred.

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Meaning of fire

Fire is an important symbol in Aboriginal culture. Traditionally it was used as a practical tool in hunting, cooking, warmth and managing the landscape. It also holds **great spiritual meaning**, with many stories, memories and dance being passed down around the fire.

But when out-of-control bush fires burn Aboriginal land, they are "also burning up our memories, our sacred places, all the things which make us who we are," says Yuin woman Lorena Allam, because "[we] lose forever what connects you to a place in the landscape".

Aboriginal fire management

Fire management is part of how Aboriginal *people look after country*. It is often called 'cultural burning'.

Traditional fire management applies cool and quick burns. These low-intensity fires are also known as **cultural burning**.

Cultural burning is tightly connected to caring for country. It is applied more frequently than hazard reduction burning and is very labour intensive.

Benefits of cool burns

Save flora and fauna. Animals, including beetles and ant colonies, have enough time to escape. Young trees can survive, and the fire keeps grass seeds intact for regrowth. The heat, which is much cooler than a hazard reduction burn, doesn't ignite the oil in a tree's bark. It's a "tool for gardening the environment".

Self-extinguishing. The fire extinguishes straight after it burns the grass ("self-extinguishing fire").

Avoid chemical weed killers. Introduced species, for example grasses, are not fire-resistant and can be removed with fire instead of chemicals. You can tell if a fire was a cool burn when the burnt grass still has its previous shape.

Cultural burns are used for **cultural purposes** and not simply for asset protection. They protect Aboriginal sites and clear access to country for cultural uses (e.g., hunting, access to fish traps, ceremony grounds).

Aboriginal preparation is essential for successful cool burning.

When to burn

The timing of fire management is critical and needs to happen at the right time of the year. To Aboriginal experts, the country reveals when it is appropriate to use fire indicators such as when trees flower and native grasses cure. "The knowledge is held within the landscape. Once we learn how to read that landscape and interpret that knowledge, that's when we can apply those fire practices."

Ideal is the **early dry season, from April to July**, when vegetation that grew during the wet season begins to dry, fuel loads are low and wind patterns and drew support a burn. You don't want to burn when certain seeds or fruits are ripe for harvest.

The bushfire threat **ends** usually in **November** when monsoon rains arrive and the wet season returns. If burning too early, big thick shrub develops after the fire which can become a big fuel load and is hard to manage.

If burning occurs too late, trees 'explode' during the fire and not much will be left after the fire goes through. Such fires emit higher levels of greenhouse gases than early season fires.

11 Question. Why is the start of the 'dry season' the best time to burn?

12 Question. What is the danger of burning too early?

9 Question. What is the danger of burning too late?

7 Question. How does cool burning remove the need for chemicals to manage the land?

8 Question. What are the cultural benefits of cool burning ?

By Lorraine Chaffer for GTANSW & ACT

1 Question. When is the best time of day for a cool burn? Why?

2 Question. Why is wind important for a cool burn?

3 Question. How do cool burns benefit trees?

4 Question. What signal do insects provide during a cool burn?

5 Question. Why is reducing the density of unwanted plants such as bracken fern important?

6 Question. What features tell Aboriginal people that land is ready to burn?

7 Questions. How does cool burning create a 'mosaic' of burnt land? What is the benefit?

Cool burns: Key to Aboriginal fire management (2)

Read why cool fires are key to managing the land and why the canopy is sacred.
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Cool fires

A central idea in fire management is to have a **cool fire**. Night-time or early mornings are ideal for cool fires as during the day plants sweat out flammable oils, and a nightly dew helps cool down the fire.

During a morning burn the wind is often gentle and supports Aboriginal people direct the burn. Without the help of the wind burning cannot happen at the right time. The sun, in contrast, encourages the fire to burn.

Cool fires don't bake the seeds and nutrients in the soil or destroy root systems. Flames are low so they cannot ignite the tree canopy and only char the bottom bark. They don't burn logs lying on the ground or habitat trees. Burning supports certain soils to improve and enables them to hold more moisture.

The speed of the fire is slow enough to allow insects to escape. If you cannot see an army of insects crawling and flying away from the fire, it is moving too fast and is too hot. The humans who manage the fire can also walk with the fire and correct if necessary.

Cool fires help change the vegetation structure by reducing the density of low plants like Bracken Fern or Casuarina which lead to extreme fuel loads. But hot fires, such as hazard reduction burns, encourage their regrowth.

Aboriginal people who execute cool fires usually stay with the fire to manage it.

Where to burn

Aboriginal people can read the land to determine which areas need fire management.

They prepare a burn by looking at the different ecosystems, patches, fuel loads, grasses, soil type, and the kinds of ashes a fire will leave behind. It is not "one big grass area to be burnt". Trees tell Aboriginal people about the soil type and this tells them what type of fire is needed. Aboriginal people know which areas will burn and where the fire is going to stop. Some areas "want to be burnt" while others need to rest and regrow.

Cultural burns burn "for country".

Burning usually occurs at the edge to the next ecosystem to not affect it as it might require a different approach of fire management at a different time. Many small mammals and birds need ground to stay unburnt for at least three years.

How to manage a burn

Aboriginal people read the systems of fire—the grass, soil type, what animals live there and how they benefit from it. Burning styles differ depending on how "sick" the land is.

To **start a fire**, Aboriginal people traditionally used a tea tree bark torch. Contemporary fire management uses either a kerosene bark torch (the oil in the bark keeps torch alive) or a drip torch (hot fires).

The first fire burns a circle around Aboriginal people's living area so they are safe.

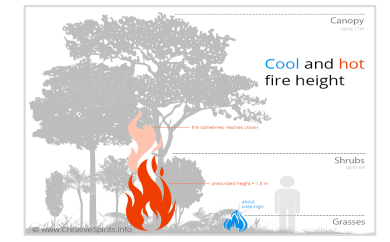
Early dry-season, cool fires trickle through the landscape and burn only some of the fuel, creating a network, or mosaic, of burnt firebreaks. These stop the late dry-season, hot fires.

The canopy is sacred

A cool fire preserves the canopy of trees. This is very important for several reasons:

- **Protection and provision.** The canopy provides shade, fruit flowers and seeds. It allows animals to come back quickly.
- **Carbon reduction.** Unlike a cool burn, a canopy fire releases too much carbon. Local land managers can then sell carbon credits for the emissions avoided.
- **Fire refuge.** When there's a fire insects and other small animals crawl up the tree to safety.
- **Preserve tree cycle.** With its canopy intact the tree does not miss its cyclic renewal.
- **Trigger for germination.** The smoke from a cool burn goes through the canopy and triggers off a reaction for seeds up there to germinate.

No wonder that Aboriginal people consider the trees' canopy "sacred".



8 Questions. Why is the canopy considered 'sacred'? How does cool burning protect the canopy?

HSIE Department
Year 8 Geography - Interconnections

Name: Teacher:

Selected commodity:

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