

# Sharing knowledge and building capacity - Monitoring the ecological impact of 2020 bushfires on Gunaikurnai Country.

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## Key Points

- The monitoring of Traditional Cultural values by Traditional Owners provides benefits for management of Country, but this can be limited by technical capability and cultural knowledge gaps.
- Scientists can support the development of culturally appropriate monitoring programs.
- Concepts of biodiversity conservation and species of significance prioritised in natural resource management need to be recontextualised when monitoring culturally important aspects of Country.
- Anecdotes, photographs, and *ad hoc* observations can be important forms of monitoring data for helping to connect Traditional Owners to Country and developing familiarity with scientific and technical concepts.

## Abstract

The Gunaikurnai Land and Water Aboriginal Corp (GLaWAC) sought to understand the impacts of the devastating 2019-20 Black Summer bushfires on the biodiversity that have significance for their culture and people. Most ecological monitoring being undertaken following these fires focused on Government departmental perspectives of biodiversity conservation and legislated threatened species. GLaWAC have a strong record of managing landscapes and working On Country to support mainstream land uses (e.g. National Parks), but are relatively new to monitoring and managing biodiversity for cultural values.

The GLaWAC fire recovery crew worked with ecologists from GHD to develop and implement a bushfire recovery monitoring program. The team overcame skills gaps in monitoring techniques, limited awareness and appreciation of ecosystems and species, and shifting from working in land management to biodiversity data collection.

We learned that spending time on Country is fundamental to valuing species and ecosystems. The stories and memories from visiting different parts of the burnt landscape helped create a natural history knowledge and literacy that can then be recorded using scientific techniques. The level of sophistication of the monitoring program needs to match the technical skills, the cultural importance and personal motivations of the people using the data.

The field crews of today will be the On Country managers of the future, and managing Country impacted by bushfire and planned burns will be a critical requirement for GLaWAC and other Traditional Owner groups. Longer term goals of capacity building are founded on supporting an appreciation for the ecosystems and species, and enabling GLaWAC to decide how and when they manage Country to maintain these values.

## Keywords

Bushfire; Traditional Owners; Gunaikurnai; Cultural values; On Country; Biodiversity; Monitoring

## Introduction

Gunaikurnai people are the First People and Traditional Owners of much of Gippsland, an area of 1.3 million hectares in the east of Victoria. Gunaikurnai have lived for tens of thousands of years on Country that

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includes forested mountains, major rivers with vast floodplains and grassy plains, extensive lakes and coastal wetlands, and marine waters. The Gunaikurnai people today continue to maintain their connection to their Country and their ancestors.

Following a 2010 Native Title determination (Commonwealth of Australia) for the Gunaikurnai people across Gippsland, the Gunaikurnai Land and Water Aboriginal Corporation (GLaWAC) were also recognised in 2012 under the *Aboriginal Heritage Act 2006* (Vic Gov) as the Registered Aboriginal Party, acting as the primary guardians, keepers and knowledge holders of Aboriginal Cultural Heritage. A significant aspect of the Native Title settlement are the procedural rights over land use activities. This has been reflected in the Joint Management Agreement with the State of Victoria, which provides GLaWAC equal stake control over ten parks and reserves in Gippsland under Native Title. This provides Gunaikurnai people opportunity to influence how land is managed, provide On Country employment opportunities, and enhances the Cultural knowledge for managers and visitors.

Gunaikurnai recognise their responsibilities for land management beyond the jointly managed parks, and the cultural connection to Country extends across all lands and waters. Accordingly, GLaWAC's *Whole of Country plan* (GLaWAC 2015) expresses the goals and aspirations for Country and plans for how to deliver this. Included in the plan is the goal: *To Heal our Country, which involves dealing with issues like erosion, pest and pollution, and management of water, fire, wildlife, and biodiversity on Country, and helping others do this in a culturally appropriate way.* GLaWAC define success towards this goal when they see the health of Country improving, with Gunaikurnai involvement in land management decisions and having more Gunaikurnai people working on Country.

The extensive bushfires affecting south-eastern Australia in the summer of 2019-2020 extended across much of Gippsland, including bushland and townships across Gunaikurnai Country. Approximately 13% of GLaWAC land was impacted by the fires (Figure 1). The extent and severity of the fires were so great, and the habitats affected so important, that the impacts on ecosystems and biodiversity were deemed a critical priority for State and Commonwealth departments responsible for biodiversity conservation, and land and waterway management.

The Victorian Department of Environment, Land, Water and Planning (DELWP), the lead arm of the State government's management of biodiversity conservation, recognised that impacts to Traditional cultural values of ecosystems and biodiversity was best assessed and managed by the Traditional Owners of Country affected by bushfire. Accordingly, DELWP provided funding to Victorian First Nations groups to conduct work required to support their own monitoring of their own Cultural values. GLaWAC subsequently obtained funding to undertake monitoring of the impacts of Bushfire and the recovery of culturally significant biodiversity.

The approach to delivering this monitoring was to employ and train a small field crew comprising Gunaikurnai people from the local communities. The field crew were inexperienced with ecological monitoring and required training and direction to undertake the monitoring. However, despite GLaWAC's experience providing natural resource management of jointly managed parks and involvement in supporting monitoring programs for research institutions and government agencies, there was a gap in capability required to design a monitoring program that could be implemented by the field crew. To address this requirement, GLaWAC engaged professional ecologists to provide technical and scientific advice. This paper outlines some of the processes adopted for this bushfire impact and recovery monitoring, and the relationship developed between the field crew and the professional ecologists.

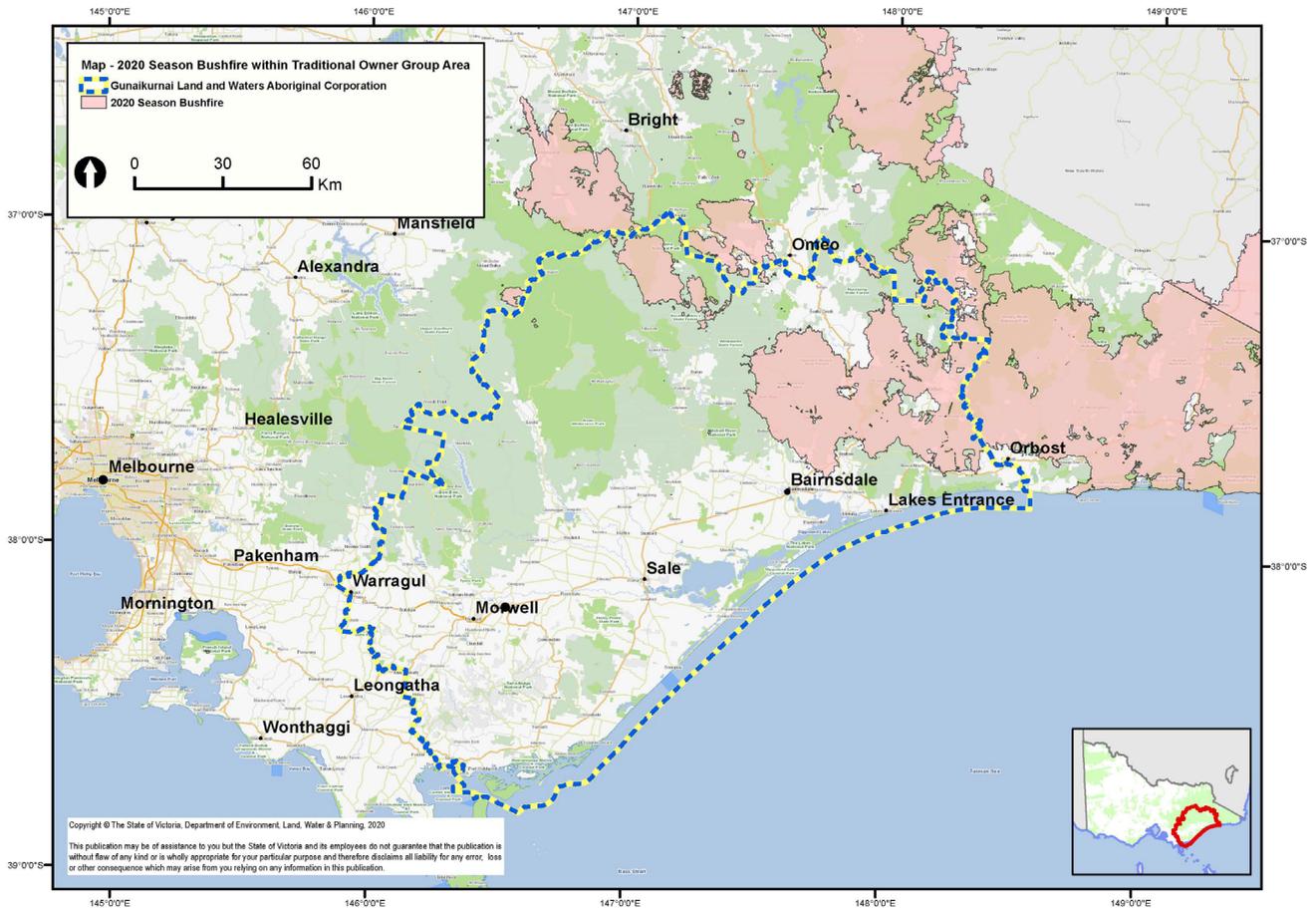


Figure 1: Outline of GLaWAC land area, overlaid with areas burnt by 2020 Bushfires.

### What is Culturally significant biodiversity?

For the Gunaikurnai, as with other Indigenous peoples, flora and fauna were fundamental to Traditional ways of living. These included totemic beings, representing tribes and families, sacred places and stories of origin and history, as well as species used as a natural resource – foods, fibers, tools, medicines. Through previous engagement with Gunaikurnai Elders able to share their Cultural knowledge, and based on knowledge of natural resource use by other Aboriginal Cultures and groups nearby, a number of botanists and zoologists (including Alison Oates, Annette Muir & Marc Perri) have supported GLaWAC to compile a list of animals and plants considered important for Gunaikurnai people. The Whole of Country plan also describes the Gunaikurnai perspective of Cultural values of Country as interconnected nature of landscape, ecosystems, and people. This highlighted that Gunaikurnai recognise species do not exist in isolation, and that Healthy Country contains environmental conditions required for these species.

### How was the monitoring program developed?

Using this list of significant species as a basis to design a monitoring program, and using ecological knowledge of the habitat requirements and known species’ distributions, the professional ecologists suggested a number of locations where these species might have existed prior to the fires. Reviewing the suggested locations, GLaWAC field crews identified areas that they had some familiarity with, either from involvement in NRM works crews, or as part of field crew assisting with DELWP monitoring programs. These locations were in and around Buchan Caves Reserve and the Tara Range Park.

Upon visiting several of these locations with the field crew to demonstrate and train the field crew in standard fauna, flora and aquatic ecosystem monitoring techniques, it became apparent that there was insufficient knowledge to reliably identify most of the Culturally significant species. In most cases, these



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field crew themselves considered important. This meant shifting the definition of Culturally significant biodiversity from simply the list prepared for GLaWAC, to include species that the field crew felt a personal connection to when working On Country. For example, some field crew felt confident to identify grasses, so would list the species they noticed. Others noticed the frogs, so counted how many different calls, without necessarily knowing what they were. Others preferred deploying and retrieving field cameras to record fauna, and sharing stories of what animals were photographed. Although unlikely to form a dataset useful for testing scientific hypotheses, it became apparent that these personal and incidental forms of monitoring were forming the basis of their knowledge of these ecosystems. And at a personal level for the Gunaikurnai field crew, these species that have meaning for being On Country are *de facto* Culturally significant species. This is an important lesson, as it places value on the knowledge and process of learning by the current Gunaikurnai community, those who are to be future Gunaikurnai Elders. These field crew will be future On Country managers and decision makers in GLaWAC.

This monitoring program provides GLaWAC knowledge about ecosystem impacts and recovery after bushfire both through the repeated assessments of environmental condition that indicates the Health of Country, but also through stories and shared experiences of natural history. The ability for GLaWAC field crews to deliver a scientifically robust and rigorous monitoring program that can produce data capable of answering detailed questions is not feasible in the immediate timeframe. However, the categorical field assessment of environmental condition will enable comparison of site condition through time, and comparison of different rates of recovery (or otherwise) between different locations. This will provide GLaWAC information that can be used to identify sites for threat abatement works, or sites that might be more likely to support their Culturally significant species. And the added benefit is that the program has created a team of Gunaikurnai people that are growing in knowledge about Country, that know the ridges and gullies, know where the fire skipped patches of rainforest, and where the soil was scorched bare. This knowledge, combined with stories - of vegetation regrowth, orchids bursting from blackened soil, potoroos in rainforest gullies, platypus in caves - will be part of GLaWAC's future management of land in response to bushfire. It will also contribute to the decision-making for cultural burning practices that are being developed by GLaWAC, to predict what the culturally significant ecosystem outcomes might be.

## **Conclusions**

Trying to conduct monitoring for species that are considered culturally significant but are not familiar to the field crew was ineffective. Instead of focusing on individual species, monitoring habitat and vegetation condition as the indicator of Healthy Country was more effective. We learned that spending time On Country is fundamental to valuing the species, ecosystems and understanding the concept of Healthy Country.

The stories and memories from visiting different parts of the burnt landscape helped create a natural history knowledge and literacy that can then be recorded using scientific techniques. The level of sophistication of the monitoring program needs to match the technical skills, the cultural importance and personal motivations of the people using the data.

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