HERITAGE ON FIRE

An investigation of management practices in relation to the protection of Indigenous cultural heritage from burning and bushfires

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DECLARATION

I certify that thesis does not incorporate without any acknowledgement any material previously submitted for a degree or diploma in any university and to the best of my knowledge and belief, does not contain any material previously published or written by another person except where due reference is made in the text.

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ABSTRACT

This research project examined the extent to which management plans contribute to the protection of Indigenous cultural heritage especially from burning and bushfire incidents. Kakadu and Uluru-Kata Tjuta National Parks from Australia and Sequoia and Yosemite National Parks from the United States were used as case studies to investigate the different protection procedures within each park and to discuss the development of their plans. As such, specific heritage related words were chosen for comparative analysis; to discern any similarities or differences in regimes between these national parks. Using this framework, the management plans were also examined taking into account various heritage discourses in order to understand how colonialism has impacted the development of management plans and on the Traditional Owners of the national parks.

The results of this analysis reveal a significant difference in Indigenous heritage protection between Australian national parks, Uluru-Kata Tjuta National Park and Kakadu National Parks, and United States national parks, Sequoia National Park and Yosemite National Park. Uluru-Kata Tjuta and Kakadu National Parks both have a detailed protection program for their Indigenous heritage sites including when protecting them from bushfires and burning. Contrastingly, Sequoia and Yosemite National Parks still have yet to develop a process that specifically and fully focuses on the protection of Native American heritage. The heritage discourse within all national park management plans was clear, however, with each national park having their own versions of dissonance within both management plans and park management. There are clear distinctions between the aspirations of Indigenous groups and the regulations that park management instill. While Australian national parks have joint management between Aboriginal and non-Aboriginal groups to discuss the options, Native Americans are only considered as stakeholders to be consulted and have no final say in any park discussions. This thesis demonstrates that while the Australian management plans have a well-developed heritage protection program compared to the United States national parks, the discourse and dissonance between Aboriginal

and non-Aboriginal peoples prevents a thorough and traditional approach to the protection of Indigenous heritage sites.

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Chapter 1: Introduction

Introduction and Aims

The stated aims of all national parks have always been to preserve, conserve and protect the biodiversity, environment and heritage of each park; ensuring their safety and continuity (Director of National Parks 2010; U.S. Department of the Interior 2006). Both Australian and North American national parks have created management plans in an attempt to ensure the security of their parks is ongoing. The topic of cultural burning[1] and bushfires in management plans have been considered by many park managers in order to mitigate the constant bushfires that occur throughout national parks (Bancroft et al. 1983; Petty et al. 2015; Russell-Smith et al. 1998). The desire for the safety and protection of national parks, both in their biodiversity and heritage, has directed discussion towards the creation of fire management plans. However, whilst their procedures for wildlife protection have consistently developed over the years, the discussion pertaining to the safety of heritage sites, especially with regards to bushfires, has been less consistent (Jones 2000).

This study aims to investigate whether management plans have the capability to protect Indigenous cultural heritage specifically from bushfire events as well as to understand the influences that are behind both fire management (including through Indigenous cultural burning regimes) and heritage management in these national parks. Four national parks (two from Australia and two from the United States) are used as case studies in this research project, exploring the protection procedures implemented in their management plans and discussing how these plans are developed. A comparative analysis using NVivo12™ software will also be employed to discuss any significant differences between these national parks. This thesis will

[1] The Aboriginal peopling of Australia has led to the inevitable domestication of fire. From this, the process of cultural burning has developed; moulding and shaping the Australian landscape for the benefit of its wildlife (Bowman 1998). Cultural burning happens seasonally, depending on the weather and the types of environment that needs burning. In the Kakadu region, for example, there is seasonal burning of the wetlands, which includes thinning the denser areas of native grasses, to promote different types of food resources that are beneficial for animals and humans alike (Russell-Smith et al. 1997a).

also examine the heritage and historical discourses that have permeated management plans, analysing the implications that colonialism and its ongoing impacts have had on the Indigenous peoples of both Australia and North America and their ability to make decisions about their traditional lands and waters.

The four national parks that will be investigated in this thesis are: Kakadu National Park and Uluru-Kata Tjuta National Park from Australia and Sequoia National Park and Yellowstone National Park from the United States of America. This selection of case studies ensures that a variety of management plans are analysed to illustrate the different methods and techniques used to develop these regimes. These case studies also reveal how these changes are being implemented; exhibiting how successful the modifications to these management plans are.

Research Questions

Primary research question:

How do management regimes in Australia and the United States of America take into consideration cultural burning and bushfires in Indigenous heritage protection?

The management plans from the aforementioned four national parks will be used to interpret the changes and developments over time, not just in their regimes but also in the policies and legislation that impact these plans. The following secondary questions will be addressed to further understand the role of management regimes in these national parks:

1. How is Indigenous cultural heritage defined in each case study?

2. What measures do heritage/park/fire management plans incorporate in relation to heritage protection in bushfire scenarios?

3. Do these management plans incorporate cultural burning as a form of management or protection regime? If so, what agency do Indigenous peoples have in the planning and execution of such burning?

4. What other roles do Indigenous peoples have in decision-making in relation to the management of heritage places in the parks (or in the parks more generally)?

5. What are the similarities/differences between management regimes in each country?

6. What do these management regimes reveal about underlying heritage discourse in colonised contexts?

7. How are these management regimes curated and developed?

8. What are the policies and legislation used to guide the creation of management plans?

Significance

Management regimes for national parks play a significant role in the implementation of several multilateral policies and agreements. They seemingly guarantee the effectiveness of these policies, ensuring that the national parks continue to be a safe haven for both environmental and cultural features (Stoll-Kleemann 2010). However, as the season of bushfires continues to grow both in length and intensity, a re-assessment of these management plans is required to provide insight into the public representation of management versus actual practice (Meyer et al. 2015a). As bushfires are an inevitability in many landscapes a growing concern towards the safety and protection of Indigenous cultural heritage is of high significance. The 2002–03 fire season in Australia, for example, severely impacted the northern and central part of the country with around 38 million hectares being affected (Ellis et al. 2004a).

Furthermore, this study assesses the relationships that are built between park management and traditional owners. As decisions regarding bushfire moderation and management rely significantly on data and information, an inclusion of traditional, local and scientific knowledge and experiences is required to accumulate information relevant to the development of these management plans. As the national parks use this information for the protection of their wildlife and heritage as well as to assist with the development of their management plans, the data needs to be relevant to the different roles and responsibilities undertaken by the parks (Ellis et al. 2004a). The information collected represents a change in the understanding of bushfire and burning techniques; reassessing the impact of fire and its relationship with the Indigenous cultural heritage in these national parks.

This project also provides a much-needed examination of heritage discourse in relation to the protection of Indigenous cultural places from increased bushfires due to climate change. The relationship between Traditional Owners and national park rangers can be a conflicted space. It has been argued, for example, that some national parks continue to neglect the significance of heritage and culture in their management regimes; disregarding how Indigenous heritage and culture intertwines with the importance and relevance of these national parks (Cowlishaw 1999; Grimwade and Carter 2000; Sullivan 2010). To ensure the longevity of Indigenous history and tradition, the Traditional Owners have continued to present and pass down the historical, biological and cultural knowledge of these national parks (Russell-Smith et al. 1997a)**.** Unfortunately, since European invasion and settlement, the transfer of some Indigenous knowledge has been interrupted with lands gradually become abandoned or taken over by non-Indigenous Australians (Woinarski et al. 2009). The significance of Indigenous knowledge and traditions will therefore be explored in order to understand why they should be incorporated and practiced in heritage and park management plans.

Furthermore, to understand the different methods in which management plans can be developed, a comparative assessment of Australian and United States national park regimes will be undertaken. Possible new methods for the creation of policies can therefore illustrate the successful execution of these management plans leading to

new and varying ways to enhance both heritage and fire management plans across national parks.

Thesis Outline

Subsequent to the Introduction chapter, the literature review in Chapter 2 explores both previous and current ideologies surrounding the subject of fire and burning, and the relationship between traditional custodians and the post-colonial creation of national parks and its management regimes. The significance of fire is discussed through an understanding of Indigenous cultural burning practices and their role in the preservation of the environment and cultural heritage. An analysis of pre and post-European invasion environments is undertaken to further interpret the significance of fire and its relationship to Indigenous cultural burning practices. An examination of the acknowledgement of heritage sites as well as attitudes towards fire as a risk and its relationship to heritage is also analysed. Literature relating to heritage discourse is also discussed to ascertain the significance of Indigenous heritage to both traditional owners and management regimes. Chapter 3 provides an overview of both Kakadu and Uluru National Parks. Past and current management plans will be presented as well as their geographical and cultural contexts. Chapter 4 provides overviews for the United States studies: Sequoia and Yosemite National Parks. In Chapter 5 the research methods are outlined, emphasising the archival research undertaken and describing the language analyses of management plans employed using the NVIVO12™ software. The results are then summarised in Chapter 6. Chapter 7 provides a discussion of these results, relating them back to the protection of heritage sites, the relationship between park management and Traditional Owners and the cultural influences that should be incorporated into these regimes to ensure the continuity of these national parks and the conservation of heritage places. Chapter 8 concludes the thesis and re-addresses the aims, summarises major outcomes and suggests potential further research areas and provides recommendations.

Limitations

A comparative analysis may be hindered by lack of previous management plans being found online as their consecutive developments may not be fully understood. Furthermore, to access management plans and other forms of data would prove difficult as correspondence with interstate or overseas institutions such as libraries or archives is dependent upon the employees' discretion especially whether access to these plans are allowed either online or by mail.

The current COVID pandemic has also closed down these institutions, preventing access to older plans and data. Travel restrictions have been instigated which has prevented interstate travel to national parks or libraries.

Chapter 2: Literature Review

A History of Fire

Since the emergence of Eucalypt plants around 34 million years ago, Australia has been a place that was, more often than not, susceptible to fire (Pyne 2006). Whilst rainforests once thrived in Australia, the arrival of aridity increased fire events (Pyne 2006:36). As fire events increased, it became one of the most powerful environmental elements that shaped Australia. Fire thrived in an arid environment, pushing environments towards a sclerophyll ecology, favouring plants that were predisposed to survive. The history of Australia does not exactly equate with the history of fire, but the history of either cannot be told without referencing the other (Pyne 2006:36) This history of fire led to a new Australian environment that continued to change and intensify as the Indigenous peopling of Australia again changed how fire was used and its developments to Australian ecology.

The Indigenous peopling of Australia and the Domestication of Fire

Archaeological evidence illustrates that during the time when humans entered Greater Australia (Sahul), the world underwent a series of rapid environmental changes; a period of global cooling marked by environmental instability (Hiscock 2008:45). Prior to the flooding of the Torres Strait during the Holocene 9 kya, Australia, New Guinea and Tasmania were all connected as a single land mass known as Sahul (Pedro et al. 2020:876). The colonisation of Sahul by modern humans involved the navigation of South East Asian where potential interactions between modern humans, *Homo floresiensis* and other possible hominins occurred (Norman et al. 2018). However, while the colonisation of South East Asia included modern humans, *Homo floresiensis* and other hominins, only the modern humans migrated towards Australia (Norman et al. 2018).

The history of the earliest humans in Australia coincides with the record of fire. This can be seen in the Lake George Basin located in south eastern Australia where pollen

has been preserved in the sediment changes over the course of thousands of years (Petherick et al. 2013). The sediment levels record herbaceous plants during the colder periods and woodland and forest flora during warmer periods. A change in one level, called zone F, exhibits a change in vegetation as *Eucalyptus* plants replaced *Casuarina* woodland and charcoal fragments had increased indicating a rise of fire usage (Hiscock 2008:49). This indication of charcoal resulting from fires created by people was taken from observations of organised Aboriginal fire-lighting in the twentieth century, coined by Rhys Jones (1969) as 'fire stick farming'. However, evidence of naturally induced burning regimes is also indicated throughout the country from left over charcoal in pollen cores (Kershaw et al. 2007; Hiscock 2008). This signifies that the presence of charcoal in deposits does not only imply the use of fire by humans, but also of natural fires (possibly created by lightning strikes) (Kershaw et al. 2007).

The fluctuation of temperature, weather and seasonality gave way to the last glacial epochs during the Pleistocene period (Pyne 2006). It was also during this time that sclerophyll ultimately took over rainforests with the Eucalyptus plant being one of the most prominent scleromorphs, and changes in the animal kingdom gave way as megafaunal species (almost a third of the Australian megafauna) became extinct.

The Megafaunal Extinction Debate

The megafaunal extinctions during the Late Pleistocene saw a variety of large marsupials, birds and reptiles disappear from the Australian landscape (Wroe et al. 2004). The extinction was a large-scale phenomenon of extraordinary degree during the Quarternary (the last 130 000 years) and yet, the cause of these extinctions is still debated. Three conceptual models have been developed to understand the cause of megafaunal extinctions: (i) changes in climate that led to restricted habitats for megafaunal species, (ii) the spread of humans and their activities such as landscape burning, or (iii) a combination of both in which human exploitation along with climate change being the case of extinctions (Saltre et al. 2019).

As noted above, the human induced megafaunal extinction concept focuses on the implementation of hazard reduction burning practices (van der Kaars et al. 2017). Much like climate change had the ability to change the Australian landscape, so could the spread of humans due to their employment of hunting regimes and their adaptation of fire (van der Kaars et al. 2017). Van der Kaars et al. (2017) argued that the considerable changes in vegetation and the use of fire that occurred approximately 70 000 years ago under a dry climate led to the extinction of megafauna. The extinction of the *Genyornis newtoni*, which was used as a climate change example by Cohen et al. (2015), is also used by van der Kaars et al. (2017) except as an example of human led extinction. They provide evidence of archaeological sites that contain burnt *Genyornis newtoni* eggshells that indicate human consumption (Grellet-Tinner et al. 2016; van der Kaars et al. 2017:4). The megafaunal extinction in other parts of Australia, such as Naracoorte (South Australia) and Lynch's Crater (Northern Queensland), all estimated to around 46.4 ka which initiates approximately 2000 years after human dispersal across Australia at ca. 47 ka (van der Kaars et al. 2017:4). Van der Kaars et al. (2017) also used evidence from Devil's Lair, an archaeological site in south-western Australia, to show the presence of humans in that area from 48 ka and its human occupation by 45.5 ka. Megafaunal extinction took place in Devil's Lair between 47 to 42 ka (van der Kaars et al. 2017).

The Significance of Fire

When the ancestors of Indigenous Australians first arrived in Sahul approximately 65 000 years ago (Clarkson et al. 2017), the country's fire regime changed from lightning (or naturally) induced fires to also including human induced fires. Fire became a land management instrument used frequently in Indigenous cultures (Layton 1986). Aboriginal groups continue to consider fire as a focal point, demonstrating its ongoing cultural significance. Considered a powerfully and culturally important symbol that celebrates Aboriginal tradition and country, fire and the frequency of fire symbolism has signified its impact through fire ceremonies, stories and other symbolic interpretations of fire, such as John Bradley's (2006) analysis of Yanyuwa burning practices.

Although there have been, and continue to be, cases of disruptions to Indigenous rights and access to traditional country since European invasion and settlement, one constant aspect of Aboriginal groups, is the use of fire: “Indigenous people continue to treat the use of fire as an essential feature of their relationship with land – as an assertion of rights and an important way of meeting obligations” (Ritchie 2009:24). An example of the importance of fire to Aboriginal peoples is illustrated in the following quote:

> The secret of fire in our traditional knowledge is that it is a thing that brings the land alive again. When we do burning the whole land comes alive again – it is reborn… fire is more than just something for cooking or hunting – that it has a deeper meaning in our culture. As they (the children) attend ceremonies with their parents they see and learn to respect the sacred fires that are central physical parts of the most sacred ceremonies.
>
> (Yibarbuk 1998:3)

Examples of publicly available traditional stories explaining the origins of fire as well as Aboriginal burning practices are explored below to further understand the significance of fire in Aboriginal cultures and traditional land management practices.

The Fire Dreamtime Narrative

Fire is a focal point in the ‘Dreamtime’ stories of many Aboriginal Australian groups. Such traditional narratives reveal the significance of fire to Aboriginal Australia; exhibiting laws and customs regarding the issues of fire and detailed knowledge of country (O’Kane et al. 2019). One of these stories comes from the Kulin people whose first story, as recorded by Robert Brough-Smyth, Chair of the Board for the Protection of Aborigines in 1863, relates to the people of the Yarra River in Victoria. This story recounts how the ability to create fire was held by an ancestral female creation being known as Kar-ak-ar-ook (O’Kane et al. 2019). The fire was kept at the end of her yam-stick, which was taken from her by Waung (the crow) by filling an ants’ nest with snakes who proceeded to attack Kar-ak-ar-ook (Smyth 1878:459). Kar-ak-ar-ook started hitting the snakes with her yam-stick, which led to the fire falling onto the ground, Waung picked up the fire and kept it to himself but was found by the great

being Pund-jel, who encouraged the people to reprimand Waung for being selfish. Due to Pund-jel's admonishment, Waung became angry and attempted to burn the people by setting the country on fire. The people were then able to gain the fire and use it for themselves (Smyth 1878:459). Subsequently, Waung was burned to death by two men, Tchert-tchert and Trarr, who were then consumed by the fire and have become the two large stones at the bottom of the Dan-den-ong Mountains (Smyth 1878:459).

The second story follows the fire origin story of the Yarra River's neighbours, the Bunurong, an Indigenous group in south-eastern Victoria. This version recounts the story of two women digging for ant eggs when they were attacked by snakes (O'Kane et al. 2019:78). Upon attempting to strike a snake, one woman broke her *kan-nan* (fighting stick) which caught on fire. The fire was stolen by Waung the crow who was then chase by two men, Toordt and Trrar (O'Kane et al. 2019:78). Waung dropped the stick onto the earth during the chase causing the two men to be enveloped by flames. Pund-jel then warned the people that now that they had fire, they should protect it so as not to lose it (O'Kane et al. 2019:78). After a while, the people lost the ability to create fire leading to an infestation of snakes. Pal-yang, creator of women, had sent Kar-ak-ar-ook down to Earth to protect the women from the snakes and used her long fighting stick (the *nerrim-nerrim kan-nan*) to fight them off. The stick then broke and burst into flames. Waung stole the burning stick flying away with it (O'Kane et al. 2019:78). Toordt and Trrar then came down from the heavens to visit the Earth and found that Waung had taken the fire to a mountain called Nun-ner-woon. They flew to the mountain to take back the fire and Trarr brought it back to the people, keeping the fire safely in the barks of the trees he had pulled off to keep the fire burning (O'Kane et al. 2019:78). This is also done by Aboriginal people while travelling (Smyth 1878:459). Toordt was unfortunately burned to death on a mountain called Mun-ni-o while trying to keep the fire alive. This series of events led Kar-ak-ar-okk to remind the women not to lose the secret of fire and Trrar taught the men how to make their own fire using wood suitable for firestick found in a mountain (Smyth 1878:459–460).

April Bright also recounts the fire origin Dreamtime story for her country, Kurrindju, in the Maranunggu cultural region in the Northern Territory:

> The chickenhawk–a-titit–took a firestick from a fire that was lit for a big ceremony and flew across Kurrindju, and as he flew across the country he burnt it. His flight path gave us significant areas and his actions began the handing down of one of our responsibilities–burning country.
>
> (Bright 1995:59)

These Dreaming stories illustrate the significance of fire and the practices related to fire in different Aboriginal groups from around Australia. The narratives exhibit how fire can be used in a variety of ways, from clearing country, cooking food and creating light. These stories also recognise the adverse effects of fire as depicted when Waung attempted to burn the people in the Yarra River story. As such, the Dreamtime stories can encourage new and different ways of including traditional cultural burning practices in modern fire management; creating a way for burning regimes to continue to evolve with the help of traditional burning techniques and stories. Fire is a key component of Indigenous history and culture, emanating from the knowledge and traditions found in Aboriginal groups around Australia.

Traditional Burning Practices

The first European explorers in Australia documented the consistent burning of land by Aboriginal peoples. Giles (1889), for example, observed the following within Aboriginal groups in South and Western Australia: “the natives were about, burning, burning, ever burning; one would think they… lived on fire instead of water”. However, Aboriginal fire management maintains the diversity of ecosystems and natural resources involved the careful application of fire to ensure that these environments continue to flourish (Steffensen 2020:48). Places that do not need the encouragement of fire include dry country, wet country, in mountain areas and down in the valleys. To protect these places, Aboriginal groups burn the other areas that required fire (Steffensen 2020). The protection of any ecosystem involves managing the areas surrounding it which illustrates how the inability to burn places that need fire can result in threatening the no-fire systems put into place (Steffensen 2020:48).

While it is also known that fire can be used for hunting purposes, such as driving game and clearing country (Pyne 1991; Levitus 2005; Gammage 2011), it has also been attributed to the domestic and cleaning aspect of Aboriginal community – where fires are lit to signify a chosen campsite, making it easier to clear the area of dangerous animals (Pyne 1991). Each type of fire use employs different fire procedures (Pyne 1991). Burning practices and methods differ based on a fire's level of intensity, expanse of area and the reason for burning. Head and Hughes (1996) illustrate how Aboriginal groups have used fire to shape landscapes, imprinting their signatures on the country:

> Aboriginal people have used fire for thousands of years to achieve various objectives, including hunting, regeneration of plant foods, access, controlling snakes and mosquitoes, signalling, warmth and illumination. While much research has focused on economic objectives and the ecological outcomes of fire use, there has also been recognition that fire was widely used to achieve the social objective of fulfilling responsibilities to country… This can involve burning to protect particular sacred sites but is more generally expressed in the desire to 'clean up the country' and imprint a human signature on it. Country that has been cared for in the proper way is referred to by Ngarinman people in the north-west Northern Territory as 'quiet' country… The Ngarinman contrast quiet country with 'wild', uncared for country.
>
> (Head and Hughes 1996:279–280)

Russell-Smith (1997), along with other researchers and Aboriginal traditional owners, managed a study regarding the use of Aboriginal resources and fire management practice in western Arnhem Land. They created a detailed seasonal calendar of burning in Kakadu National Park based on Aboriginal knowledge of burning and its results observing monsoonal climate conditions. They also looked at floral and faunal behaviours and habitats a seasonal classification of these species. Fire management in Kakadu National Park was developed and remoulded based on this work; creating a foundation for a parallel fire management system – one that uses both Park management and the traditional Bininj landscape burning (Russell-Smith et al. 1997).

Native Americans also have significant relationships with fire. Native Americans' use of fire was a large part of their daily lives. Their use of fire for burning areas to decrease dense brush was a universal practice especially throughout California (Anderson 2006:382). The success of Native American economies largely depended on their application of fires. Their food supplies, habitats and daily lives were directly or indirectly managed by their cultivation of fire (Anderson 2006). As such, only carefully applied and effective fire management could have supplied the large quantities of food required to support their groups. Upon their development of fire-making technologies, most tribes were able to start and transport fire with no difficulty thus creating a powerful tool that could alter whole landscapes (Anderson 2006). Lewis and Bean (1973) state that to differentiate Native American fire regimes from naturally induced fires, there are four general considerations: the seasonality of burning, the frequency of the fires, fire intensity and which sites are being burnt. The Canadian Great Plains provide an example of this, in which the short grass prairies were burned every autumn prior to Native American bison hunts (Lewis and Bean 1973). This area was burnt to push the bison towards the tall grass prairies in time for people to hunt them during winter.

Similar to the employment of fire by Aboriginal Australian peoples, Native Americans burned the country to herd wildlife for hunting, enhance plant production and protect their homes from enemies and predators (Kay 2000). Without management regimes recognising the significance of fire to the parks when applying their burning techniques, the current American ecosystem will continue to lose not just their biological diversity, but also the means of protecting both their cultural and natural resources (Kay 1998).

The inclusion of Indigenous fire management traditions into national park management illustrates the relevance of Indigenous knowledges of ecological wildlife and the use of fire to protect and manage the large expanse of these parks. Fire is an integral part of Indigenous history and culture, and to include Indigenous fire regimes into management assists in the prevention of naturally induced fires while also implementing long term conservation strategies for heritage sites and protected areas within national parks. The acknowledgement of traditional ecological and fire knowledge in both Australia and the United States, particularly with regards to fire

management for conservation, is essential. Including cultural burning regimes within park management would be an important step into managing Australian landscapes today.

Management Plans and Related Policies

The creation of national park management plans stems from both government and archaeological (and other) policies that aim to extend the significance of these national parks; promoting their Indigenous cultures, sacred sites and natural ecologies. However, to articulate how fire management plans are created from the perception of fires and their risk, then the definition of bushfires must also be discussed. If the issue being debated upon is 'mis-defined', flaws in policy developments and their implementation can occur. This idea, developed by Clark (2002) created questions such as: How was this problem created? Why is this considered a problem? How big is the problem? Will this magnify into a larger problem? (Clark 2002:131). An investigation of cross-boundary issues using interdisciplinary research as well as an examination of socio-political decision-making processes will therefore be discussed in this literature review.

Policy is defined by Colebatch (2006:14) as a "collective process of managing interpretation across a range of fields of activity" and is congruent to the custom of governing, in which the government acknowledges problems, whether national or local, and discusses courses of action to deal with them. Policy makers, generally ministers who discuss the development of policy in cabinet, decide upon the action required to execute the policy, with academics and researchers included as 'advisors' to assist with the information used for policy making (Colebatch 2006).

The creation of policy also presents the problem of policy inefficiency. To successfully examine the reasons behind policy efficiency is to understand the methods required in the creation of a problem, its policy focus and implementation (Clark 2002). Problem-framing looks at the creation of a policy problem by both the policy committee and the general/local community, while policy-framing indicates the identification of policy related principles and goals. The implementation of policy is part of the process

that looks at choosing policy instruments and the discussion of strategies. Furthermore, the act of 'monitoring and evaluation' refers to how a given policy performs (Dovers 2005:59). Regarding decision-making in policy, the analysis of the decision-making process considers common interests, using Clark's (2002:1643) statements that the "decision process is the means by which people can achieve freedom, security and public order, including sustainable management of natural resources".

This leads to acknowledging that policy choices are determined by concerns deemed 'important' to the public as well as the changing levels of social acceptability (Dovers and Wild River 2003). Due to this intention, Clark's (2002) environmental policy analysis highlights the importance of institutional influence to those who convey knowledge, control and power. He believes that the susceptible elements and conflicting ideas will affect the procedures where problems are managed and solved (Clark 2002:158). With this in mind, understanding competing ideologies is integral in assisting the research of analysing the structure of organisations and relations. A problem-definition process based on Clark's methodology (see Figure 1 below) will therefore showcase how a particular policy or issue is tackled and how it may lead to insignificant outcomes.

Image removed due to copyright restriction.

Figure 1: Problem-definition process in environmental policy (Clark 2002).

Problem definition comprises of outlining the institutional facets of a specific policy; looking for structural gaps and understanding whether the interpretation and interests of those involved are legitimate. Clark's (2002) policy process analysis seeks to identify how rational structures work and their relationships with each other; looking at how political groups have power over scientific outputs and how governing elites control discussions.

However, policy process analysis is taken from the general community. Brunner et al. (2005:10) discussed how the primary concern regarding resolving policy problems is the incapability of communities to work towards a mutual goal. This is taken from the interpretation of natural resource management as a science, leading to the use of scientific based methods and processes. Brunner coins this the 'scientific management' method (Brunner et al. 2005:11). The 'science management' method acknowledges the role of policy research as a place for informing both the public and

the acting body about the relevant information regarding specific legislation; which, in this case, relates to management regimes. However, the determination of publicly standard levels of risk cannot rely only on a basis of science. Science can only be used to advise a comprehensive management, ensuring its proficiency. So, the case of park management, specifically their fire management processes, presents a regime involving complex, symbiotic and dynamic systems. Douglas and Wildavsky (1982:80) rightly point out that the classification and implications of risk depends on society's interpretation of the term. Fire and risk management, therefore, are a part of complex systems, needing both social and institutional durability to develop a strong management regime.

The 'rational management' method, as asserted by Everett (2003), looks at the premise of the creation of policy, understanding its purpose and argues for a resurgence of the rationalist model. The evidence Everett (2003) provided for her 'rational management' method was profound, bringing forward a different take on the policy cycle model. This method provides a 'rational' result through the selection of the best possible means to an end, discussing each phase of the development of policy to achieve the best possible outcome (Davis et al. 1993). Everett (2003) reiterates her perspective using a case study that indicates how the political sphere or 'play for power' determines the content of policy, whether the issue was meant to be discussed or even executed. Douglas and Wildavsky (1982), examines how the management process not only focuses on the science, but also on the rationalist theory that the decision must be essential for the progression of policy. While there are three different meanings for 'rationalism', the 'rational management' method practiced during the development of policy looks at the general knowledge taken from the subject and uses this information to understand the positive and negative aspects of the research before doing what the decision makers deem is necessary for the development of the policy (Dye 1998:24).

Complex Systems

The complex systems theory classifies complex issues as 'wicked' problems (Lucas 2001:4). Park management and fire management can be considered a 'wicked' problem as it symbolises interrelation, ambiguity and discourse (both in heritage and

analytical dialogue). Mitchell (2006:1195) indicates complex systems as “large networks of relatively simple components with no central control, in which emergent complex behaviours is exhibited”. As a system signifies a group that continues throughout time due to its cohesive structure, ‘systems thinking’ therefore refers to:

> … any process of estimating or inferring how local policies, actions, or changes influence the state of the neighbouring universe. It also can be defined, as an approach to problem solving, as viewing problems: as parts of an overall system, rather than reacting to present outcomes or events and potentially contributing to further development of the undesired issue or problem.
>
> (O’Connor and McDermott 1997:11)

Systems thinking originally started as a product of organisational thinking. Stemming from concerns of efficiency regarding technological structures and process, this framework focuses on learning through experiences (Checkland 1999). It aims to understand the problems taken from complex conditions by studying the methods used to locate solutions; not studying the solutions themselves (Checkland 1999). This method of systems thinking requires the researcher to acknowledge the social constructs and subjectivity of their interpretations; analysing situations in a holistic manner, through simulations and ‘real world systems’ (Checkland 1999).

De Rosnay (1975) analysed systems thinking, examining the relationship between systems and how they react to change. His theory looks at the system enduring by evolving and controlling its environment. Its complexity comes from its collective relationship to other systems. Applying this notion to societal complexity exhibits two ideologies used throughout. The first is shown as De Rosnay (1975) interprets contemporary societies as complex; implying that these societies can collapse upon any changes. It therefore shows that the aptitude of evolution is integral for its survival. There is also a ‘collective intelligence’ that shows how evolving societies tend to change and revolutionise, increasing their chances of survival. The two possible risks linked to change are the ‘increase in social entropy’ or a growth in complexity until chaos ensues. This shows the procedures required in evaluating the context and conditions of a problem; understanding the variables that could change the system where the issue is discussed and creating different models to evaluate any changes

throughout. Adaptive management will therefore be discussed subsequently to exhibit how it originates from systemic thinking.

Changes throughout the course of society show that adaptive management is the best possible regime to follow. The use of adaptive management is incorporated in policy changes due to the unpredictability of regimes leading to greater flexibility. Adaptive management involves understanding and acclimatising to structures and institutions. Its empirical foundation reduces the disagreements over policy decisions and management approaches (Lee 1993:85).

Changes in management regimes can be seen as a direct interpretation of adaptive management; a form later used by the proponents of resilience theory. Resilience theory analyses modifications in adaptive systems and acknowledges the complexity and ambiguity in the systems, attempting to accommodate any potential changes (Holling 1973:21). For the purpose of this thesis, resilience is interpreted as how a group is capable of opposing and recovering from unfavourable circumstances although can also be construed as "the capacity of a system to absorb disturbance and still retain its basic function and structure" (Walker and Salt 2006: xiii). Regimes of this stature evolve through progressions of chance which should be seen in the new management plans throughout the years (Walker and Salt 2006:10)

As such, the different types of policies and legislation used to create these management plans are important in understanding how these parts use the information to regulate fire management and protect both their cultural and natural resources. Australia has a variety of legislation that assists in the development and implementation of national parks and their management. Regarding the case studies used for this study, Kakadu and Uluru National Park, the *Aboriginal Land Rights (Northern Territory) Act 1976* (ALR Act) establishes that Aboriginal people in the Northern Territory can claim their rights to the land based on traditional occupation. This Act is an important piece of legislation that is incorporated and included throughout all national park management plans to ensure that both Aboriginal culture and land in the Northern Territory is met with respect and veneration; to disregard this legislation would be to disregard the original custodians and their rights to the land. There is also the *Environment Protection and Biodiversity Conservation (EPBC) Act*

1999, which enables all states and territories in Australia to provide national environment and heritage protection as well as biodiversity conservation.

State and national legislation are not the only principles to be followed when developing a management plan. With national parks such as Kakadu, Uluru and Yosemite National Parks being World Heritage Sites, a United Nations Educational, Scientific and Cultural Organisation (UNESCO) management plan for these parks was drawn up as a part of a German commission to "lay down goals and measures for the protection, conservation, use and development of World Heritage Sites" (Ringbeck 2008, p. 6). This UNESCO management plan became a compulsory inclusion for all sites listed on the World Heritage List upon the revised implementation of the 'Operational Guidelines for the Implementation of the World Heritage Convention' (Ringbeck 2008).

Similarly, the Burra Charter, although not legislation, is a set of principles created to set in motion a nationally accepted standard for heritage conservation practice in Australia (Australia ICOMOS 2013). It is used in national parks to ensure the upkeep and constant conservation of heritage sites. Initially drafted in 1979, the Burra Charter, while originally written for Australian sites, has since become well known as an important heritage management and conservation policy; attaining a significant and globally dominant reputation that has expressed the importance of cultural heritage (Waterton et al. 2006). Its application in relation to Indigenous heritage sites have been a cause for debate as while the drafting of the Burra Charter included people working in Aboriginal studies, Aboriginal people were initially not included. While the revised Burra Charter from 2004 onwards is now considerate towards the cultural, social and spiritual values of Indigenous heritage sites and peoples, discussion continues regarding how appropriate or relevant the methodologies used by the Burra Charter are for evaluating the significance and protecting the values of Aboriginal sites (Sullivan 2004:37). Arguments from some associates of Australia ICOMOS have stated that the Burra Charter is incapable of dealing with the full extent of Indigenous values with its policies being designed more towards European heritage sites. Other commentators, including members of the Aboriginal community, agree as they argue that employing the Burra Charter to Aboriginal heritage sites and culture is considered

cultural imperialism; attempting to use Aboriginal heritage to create an Australian national identity (Sullivan 2004:37).

The original Burra Charter was biased against traditional Aboriginal society as its interpretation of cultural significance focused primarily on the archaeological or heritage fabric (a form that does not readily take into account different ways of dealing with heritage such as intangible heritage). However, future renditions of the Burra Charter focuses on a person's assessment of significance (Sullivan 2004). It has developed its initial study of cultural significance, developing its concept so as to no longer be fabric focused. Instead, it now deals with a variety of cultural and heritage sites and values. The use of the Burra Charter in relation to Aboriginal heritage sites has therefore readjusted the conservation and protection ideologies surrounding the care and assessment of heritage sites, creating a more holistic and relevant charter utilised by all heritage sites and national parks. The discussion of the Burra Charter leads us to the following section on 'heritage discourse'.

Heritage Discourse

Laurajane Smith (2006:300) defines heritage discourse as "a process of mediating cultural change and… asserting, negotiating and affirming particular identities and values". The concept of heritage has evolved over time, and with it the concept of 'discourse'. Heritage is usually described as a positive value, where the preservation of material culture, such as art, architecture and landscape, as well as intangible culture–music, theatre, rituals and human memory–are a common good from which everybody benefits (Silverman and Ruggles 2007:3). Its definition has also changed over time, presently being analogous with a constructionist perspective referring to how a selection of material culture as well as traditions and stories have been used as cultural, political and economic assets. Peckham (2003) argues for this 'present focused' perspective stating that heritage has consistently been used as a collective memory moulded by the political and social apprehensions of the present. The study of heritage therefore interacts only with the interpretations of heritage resources as selected by the demands of the present (Ashworth et al. 2007). This leads to heritage

being under constant revision and change which presents it as a source or result of social conflict (Silverman and Ruggles 2007).

Heritage is also known to be interrelated with identity and territory, creating conflict over issues such as Indigenous land rights and cultural property rights or Indigenous peoples who are debating the management of cultural heritage (Silverman and Ruggles 2007:5). Identity refers to the collectiveness and relationship in a group with the Saidian discourse of the 'other' groups being a central part to its concept (Said 1983). This discourse of 'other' looks at the different, and often conflicting, beliefs, values and ambitions of groups creating differences between each other. These characteristics of otherness are significant in understanding the values of identity, which were created in contrast to them (Graham and Howard 2008) . The relationship between heritage and identity is complex with concepts that are both spatially and temporally variable. As such, the description of heritage as conceptualised came about from a national scale as the notion of 'national heritage' was essential in incorporating both identity and heritage:

> Indeed, nationalism and national heritage developed synchronously in nineteenth-century Europe. The nation-state required national heritage to consolidate national identification, absorb or neutralise potentially competing heritages of social-cultural groups or regions, combat the claims of other nations upon its territory or people, while furthering claims upon nationals in territories elsewhere.
>
> (Graham et al. 2000:183)

Although the idea of 'national heritage' is not palatable to all groups as discussed further below.

In order to identify how heritage is reflected upon in management plans and how local contexts and cultural customs have shaped and used it, an understanding of heritage discourse and its global reproduction must be assessed. Discourse has been a widely debated notion, having been constantly divided in definition and concept (Wu and Hou 2015). It shows heritage not as a *thing*, with clear values, but as a social construct, able to be bent based on the political and social values of the present (Smith 2006).

This leads to the discussion regarding the interpretation of heritage sites and the heritage values of Aboriginal groups operating with national parks. Whether or not Indigenous groups are included in national park management in relation to their intangible heritage and the inclusion of their heritage sites in these protection regimes is integral in considering how heritage discourse can permeate these park management plans. This will therefore be discussed subsequently, looking specifically at the inclusion of Indigenous groups, or lack thereof, in management plans, policies and legislation.

Discourse in Joint Management

Some Australian national parks have operated under the premise of 'joint management' which attempts to focus on a cross-cultural approach to the management of national parks. Kakadu National Park is considered to be the first of these parks to apply the concept of joint management under the premise of lease-back arrangements for Aboriginal owned lands (Wearing and Huyskens 2001). That being said, the inclusion of Aboriginal people in park management was often not formally recognised nor were they formally included (Foster 1997). This has shed light on the Eurocentric methods to park management that disregarded Aboriginal rights and standpoints. Without a clear definition on the model's philosophical approach and without the expansion of protected area's policies from the conservative Eurocentrism, some observers believe that joint management would not achieve its social goals nor environmental sustainability (Wearing and Huyskens 2001).

The premise of joint management and Aboriginal ownership in national parks stems from a reaction towards increasing legal recognition of Aboriginal land rights to traditional lands, starting with the creation of the *ALR Act (Northern Territory)* in 1976. Although this legislation applies only to the Northern Territory, it has garnered and developed legislation in all other states, though often weaker with regards to returning traditional lands to Aboriginal people (Smyth 2001). Smyth (2001) explains the meaning of joint management in the context of national parks as an establishment of a legal organisation and management that aims to acknowledge the rights, interests and obligations of the traditional owners of the national park as well as the relevant government, acting for the community. He reflects upon the arrangements instigated

in joint management, referring to the transfer of ownership of national parks to Aboriginal owners in exchange for national parks to maintain their status over the land as well as shared responsibility in park management (Smyth 2001:2). However, Smyth (2001) also illustrates the issues and discourse within joint management in national parks as he describes how joint management can also lead to divisiveness between non Aboriginal management and Aboriginal groups based on use of park resources, community development and sharing of country (Smyth 2001).

The term 'joint management' has been a topic of constant reproach and discussion since its conception in the late 1970s. Haynes (2009:40) describes the confusion regarding its meaning and states: "… the subject (joint management) has indeed been discussed at tedious length at previous Board meetings, and informally between Aboriginal and white staff and board members, without any lasting agreement as to what *it* constituted." Haynes also points out the obvious discourse and divide between Aboriginal and non-Aboriginal Board members regarding the joint management situation stating:

> If anything, these discussions seemed only to have reinforced divisions between Aboriginal and white Board members, uncovering epistemological differences that are readily exposed when members of different cultural groupings discuss the 'meaning' of an otherwise vague signifier.
>
> (Haynes 2009:40)

Joint management has been described as an attempt to combine non-Aboriginal conservation interests with the apprehension and knowledge of Aboriginal owners (Craig 1993:137), and that its aim is to conserve the parks ecosystem while preserving its cultural and spiritual values for traditional owners (Lawson 1997:156). However, joint management has also been described as being an inherently Westernised cultural management regime with a Eurocentric Australian cultural bias. Craig (1993:147) explains that the inclusion of Aboriginal people into a conventional policy making process leads to relying and accepting the governing culture. These regimes look towards non-Aboriginal professionals as well as the grant of land rights under the system of Western land law, instead of acknowledging the expected system of Aboriginal land tenure. He further recognises the disadvantage of Aboriginal groups

as the implementation of joint management regimes in national parks allows mostly for Eurocentric practices (Craig 1993). Strelein (1993:390) also criticises joint management addressing it as coercive as the government claims to offer something to Indigenous landowners despite 'negotiations' resulting in ridiculous sacrifices of control simply for their recognition.

While there is no model of success for joint management, an achievement within its development and premise should be analysed based on Aboriginal empowerment, equity and social justice. Lawrence (1996) suggests that formal structures such as a national park's 'Board of Management' should include a majority of Aboriginal traditional owners who are able to use their knowledge and authority to discuss refinements to management as a part of a 'formal power sharing' management arrangement. The process of joint management should also include constant consultation and negotiation, identifying goals regarding the protection and conservation of natural and cultural resources based on suggestions and aspirations made by traditional owners (Lawrence 1996:10). It requires consistent commitment from both the management agency and traditional owners. Furthermore, joint management arrangements should also empower their Aboriginal group counterparts; creating a safe and protected place that allows traditional owners to exercise their responsibilities, creating clear objectives and priorities from transparent and rational police values, and allowing Aboriginal groups to instigate daily operations that continue to conserve the protected heritage areas (Lawrence 1996).

'D' is for Discourse

To understand the type of discourse that permeates through Aboriginal heritage and culture; the type that can be seen illustrated, at times, in joint management, the meaning of discourse must be discussed. As a widely debated topic, the notion of discourse has been vague and ambiguous with different meanings being applied based on different backgrounds (Wu and Hou 2015:37). Gee (2005) has defined discourse in two different ways, separating the definitions based on a capital letter 'D' and a lower-case 'd'. The lower case 'd' for 'discourse' is referred to as language in use, where the use of language is not thought of as selecting tools or resources from a closed system, but as an action being influenced by specific settings (Gee 2005:7).

In other words, it focuses on the issue of “how to do things with words” (Austin 1975), or “how language is used ‘on site’ to enact activities and identities” (Gee 2005:7). However, what is used predominantly for heritage is ‘Discourse’ with a capital D, which is defined by Gee as “ways of acting, interacting, feeling and believing, valuing and using various objects, symbols, tools and technologies – to recognise yourself and others as meaningful and meaningful in certain ways” (Gee 2005:7). This is considered by Fairclough (2006:11) as a way of showing different experiences from a specific perspective or “particular ways of representing aspects of the world”.

The concept of ‘Discourse’ is not dissimilar to the concept of discourse as developed by Michel Foucault (1972). Foucault (1972:107) argued that discourse is “constituted by a group of sequences of signs, in so far as they are statements, that is, in so far as they can be assigned particular modalities of existence”. The Foucauldian theories of discourse therefore look at how essential these two processes are: the processes of meaning-making, which can be seen in Gee’s notion of Discourse, and the process of ‘knowledge/power’ interaction (Wu and Hou 2015:38). Foucault considers nothing meaningful to exist outside of discourse. However, this does not entail that the material world does not exist. In fact, Hall (2011:45)states that what Foucault endeavours to dispute is that “nothing has any meaning outside of discourse”. Discourse has the capability of creating power based on its ability to ‘produce the world’ and therefore quite often relates knowledge with reality itself (Wu and Hou 2015). It can also refer to the different ways of attempting to understand the world and, by utilising specific equipment or establishments, can police what is to be discussed, therefore manipulating how interpretations are being circulated and read (Wu and Hou 2015). Discourse (with a capital D) therefore has an overtly political element to it; illustrating that Discourse is not about what people discuss, but what can be discussed.

Discourse within the topic of archaeological significance looks towards the significance of ‘science’ and its authority to interpret its conceptual context (Smith 2004). As such, the initial significance assessment of material culture is where all policy decisions and practices should originate (ICOMOS 1964). The assessment of significance provides a process by which the meanings of the past can be discussed and the cultural and natural values of the object or place examined to understand how these influence its meaning. While this is acknowledged and addressed in cultural resource

management, it has also been argued by Smith (2004) that the archaeological significance of Indigenous heritage has been given a higher priority in the authority of the meanings and management of Indigenous heritage.

Analysing the concept of heritage suggests that while the past attempts to remain objective, the discussions surrounding it never do, only that the representations of the past will be constructed within the current social and economic contexts (Bond and Gilliam 1994; Trouillot 1995). This is agreed upon by Tunbridge and Ashworth (1996), who understand that the present's interpretation of the past is carefully selected to show a specific interpretation for an imagined future. However, this ostracises the past as argued by Lowenthal (1985:263):

> Every act of recognition alters survivals from the past. Simply to appreciate or protect a relic, let alone to embellish or imitate it, affects its form or our impressions. Just as selective recall skews memory and subjectivity shapes historical insight, so manipulating antiquities refashions their appearance and meaning. Interaction with a heritage continually alters its nature and context, whether by choice or by chance.

The heritage discourse within United States national parks can be exhibited by addressing how the creation of policy within national parks changed the perspective on Native Americans and their heritage. Muriel Crespi, an American National Park Services ethnographer, initiated a change in the national parks in the Sierra Nevada (Sequoia, Kings and Yosemite National Parks) as she came to write a policy to ensure the involvement of traditional owners and anyone else traditionally associated with the park lands (Wray et al. 2009). Crespi's 'Ethnography Program' provided a chance to guide new pieces of legislation through the process of implementation. Crespi used the *National Environmental Policy Act* (NEPA), to guarantee the incorporation of consultation with American Indian tribes into the planning processes of park management plan (Crespi 2002). This was re-established by AIRFA, the *American Indian Religious Freedom Act of 1978* (AIRFA), which ordered federal agencies to recount the new policies and plans regarding working with Native Americans, whose sacred and heritage sites are now controlled by federal bureaucrats (Wray et al. 2009).

Despite having long been a part of joint management teams within Kakadu and Uluru National Parks, common discourse is still applied when attempting to include Aboriginal people (Haynes 2017:38). Due to cultural differences between the two groups in joint management, it can only be created through shared discussions and activities. What is discussed depends wholly on the context that can be understood between both groups (Haynes 2017). In this perspective, the previous Foucauldian statement that describes common discourse as “a corpus of knowledge that presupposed that same way of looking at things” is not the same but brings instead a multitude of knowledge that is brought about by shared experience (Foucault 1972:36). However, it can also work similar to Smith’s capital D ‘Discourse’, which looks at what the politically dominant majority may find allowable for other groups to do or say (Smith 2004). Shared implies complete equality which, to non-Aboriginal park managers, actually means “what we’ll accept” (and exactly the form that we will accept), with less compromise than right perhaps occur in a truly shared situation (Smith 2004).

Chapter 3: Study Area–Australian National Parks

The two Australian national parks chosen for analysis in this research project are located in the Northern Territory. Kakadu National Park and Uluru-Kata Tjuta National Park. Both of the parks contain a plethora of Indigenous archaeology and history that exhibits both the tangible and intangible heritage of the Aboriginal traditional owners. This chapter presents a profile of these parks through an examination of their current environmental settings in conjunction with their cultural context.

Kakadu National Park

Located within the Alligator Rivers region of the Northern Territory, Kakadu National Park extends from the coast in the north down 150 kilometres to the southern hills and basins, and 120 kilometres from the Arnhem Land sandstone plateau in the east, until its western boundary through wooded lowlands (Figure 2). It covers an area of 19 810 square kilometres making it Australia's largest park, and one of the world's greatest protected areas. A place in which its physical and biological values are widely recognised and maintained. Although there are now well over 100 000 protected areas in the world, as classified by the World Conservation Union, there are seven categories which separate these protected areas. The oldest, and most recognised, is that of the 'national park', which permits for the recreational use of the land so long as these uses to do not hinder the area's future ideals. This definition has been applied for over a century as taken from a model based on Yellowstone National Park in the United States, the world's first 'official' national park.

The name Kakadu is a derivation of 'Gagadju' which was the most spoken language in Arnhem Land at the beginning of the twentieth century. The significance of Aboriginal culture and traditions can be seen throughout the park as the source of thousands of archaeological sites that include examples of Aboriginal rock art paintings, 'Dreaming' tracks and sites of cultural significance whose stories have been passed down for tens of thousands of years to its current owners . Kakadu's traditional

owners, Bininj/Mungguy, have two main responsibilities as the area's landowners – looking after country (*gunred*) and looking after people (*guhpleddi*). These responsibilities are intrinsically linked by their cultural traditions and embody the complex relationships and obligations joining landowners, the Country, and other Bininj/Mungguy.

Kakadu National Park's inscription on the World Heritage List further presents it to the world as a place of significance, both in its rich history and biodiversity. Its natural heritage showcases the park's unique natural phenomena and features important and significant habitats that protect and conserve threated species of plants and animals (Department of the Environment and Heritage 1999). Furthermore, the park's expansive cultural landscape contains significant cultural heritage ranging from archaeological evidence to the traditional laws, customs and beliefs that are intimately tied to Country (Department of the Environment and Heritage 1999). Kakadu National Park is also listed on the National Heritage List through the EPBC Act as well as being a wetland of significant importance through the Ramsar Convention. Most species found in the park are protected by international agreements such as the Bonn Convention and Australia's migratory bird protection agreements with China (CAMBA), Japan (JAMBA) and South Korea (ROKAMBA).

Created by: Alyssa De Luna
Date Created: 27th February 2020

Figure 2: Kakadu National Park.

Natural Environment

Kakadu National Park is well known for its natural heritage. Its coastal, riverine and estuarine flood plains exhibit the significance of constant geological processes, illustrating how changes in sea level caused ecological effects especially in northern Australia (Figure 3) (Department of the Environment and Heritage 1999:6). Furthermore, the ecosystems that can be seen within Kakadu's wetlands, woodlands and Arnhem Land Plateau exhibit the effects of constant ecological and biological processes with regards to the evolution and development of terrestrial and aquatic plant and animal communities (Department of the Environment and Heritage 1999:6).

Unlike other parts of Australia, the northern Australian environment has had less disruption as a result of European settlement. This is evidenced by the expansive landscapes and environment of which there have been little modifications, large floral and faunal diversity as well as habitat heterogeneity (Department of the Environment and Heritage 1999:6). Kakadu's environmental diversity along with its large size contributes to its extensive conservation value and ecological continuity. This enhances the response rate of ecosystems and species within the park to natural disturbances and events (Department of the Environment and Heritage 1999:7).

The natural landscapes within northern Australia also feature significantly within Aboriginal religious beliefs and traditions. As a place that has been home for traditional owners for approximately 65 000 years, the national park presents an example of human interaction with the natural environment (Clarkson et al. 2017; Department of the Environment and Heritage 1999). It is a place of cultural, religious and social significance within the Aboriginal community and reflects the history of human occupation through its ceremonial places and archaeological sites.

Image removed due to copyright restriction.

Figure 3: Kakadu National Park (Hastings 2020).

Cultural Landscape

Kakadu National Park boasts one of the largest concentrations of rock art in the world. There are over 15 000 rock art sites within this area, of which only approximately 5000 artworks have been recorded by park staff. These rock art sites of significance include Cannon Hill, Ngarradj Warde Djobkeng, the Nourlangie-Mt Brockman massif, Ubirr, Namarrgon Djahdjam, and Deaf Adder Creek (Department of the Environment and Heritage 1999:10). The art is a significant part of the traditions and culture of current traditional owners as it provides a strong physical connection to the long history of Indigenous occupation in northern Australia (Chippindale and Tacon 1998).

The connection can also be seen in Aboriginal communities today as the artworks present the continuity of their traditional knowledge – exhibiting objects, animals and activities that are familiar to Bininj/Mungguy as well as creation stories and religious and ceremonial rituals that traditional owners continue to discuss and pass down through each generation (Department of the Environment and Heritage 1999:10). These artworks also range in styles and forms including stencils and multi coloured x-

ray art being used to portray depictions of animals, humans and hunting scenes (Figure 4). Drawings applied with beeswax can also be found throughout Kakadu National Park specifically presenting the first contact of Aboriginal groups with the Macassan and European cultures (Department of the Environment and Heritage 1999:10).

Image removed due to copyright restriction.

Figure 4: Burrungkuy (Nourlangie) art site (Eve 2020).

Kakadu National Park's cultural landscape also includes a plethora of archaeological evidence; presenting examples of the hunter-gatherer way of life that has been a part of Aboriginal history since its first peopling 65 000 years ago (Clarkson et al. 2017).

Traditional Owners–Bininj/Mungguy

As noted above, the Aboriginal peopling of Kakadu National Park goes back approximately 65 000 years, as evidenced by one of Australia's oldest occupation sites, Madjedbebe (Clarkson et al. 2017). This site, located at the base of a sandstone outlier and inclusive of traditional rock art that exhibits a variety of styles and time periods, is within the Jabiluka mineral lease which is surrounded by the national park (Clarkson et al. 2017).

The traditional owners of the Kakadu National Park are from a number of different Aboriginal clan groups. There are about 19 clan groups throughout Kakadu however, the Kakadu National Park Board of Management uses the term Bininj/Mungguy when referring to the Aboriginal groups in the management plans. Bininj, pronounced 'bin-ing', is a Kunwinju and Gundjeihmi word and is similar to the English word 'man' and can be acknowledged as man, male, person or Aboriginal people (Director of National

Parks 2016). Similarly, another Aboriginal language found with the Aboriginal groups of Kakadu National Park is Jawoyn, whose word for ‘man’ is Mungguy (Director of National Parks 2016).

The term ‘traditional owner’ usually refers to a person who is a member of the clan connected to a particular clan estate (Ansell et al. 2020:375). In the ALR (*Northern Territory) Act* 1976 the term is defined as: “A member of a local descent group of Aboriginals who have common spiritual affiliations to a site on the land, being affiliations that place the group under a primary spiritual responsibility for that site and for the land; and are entitled by Aboriginal tradition to forage as of right over that land”. In Kakadu National Park, the principal responsibility for land is determined according to traditional laws and customs and includes the making of important decisions that improve upon the management of country, such as protecting cultural and sacred sites. These decisions are what ensures the continuity of Bininj/Mungguy traditions and are passed on to younger members of the group as recounted by Bessie Coleman:

> When I want to do something on country I have to ask the right person. To go and burn country or do weed control I have to ask the right person, traditional way, because there’s many important sites there or whatever. This is our way.
>
> Bessie Coleman, Wurrkbarbar clan (Director of National Parks 2016)

Park Establishment

Kakadu National Park was established under the *National Parks and Wildlife Conservation Act 1975* (NPWC Act) in three stages between 1979 and 1991. Upon the replacement of the NPWC Act by the EPBC Act in 2000, the park still continues as a Commonwealth reserve under the EPBC Act according to the *Environmental Reform (Consequential Provisions) Act 1999*, which ensures that the park continues its preservation in its natural condition and to guarantee the appropriate use and appreciation of the park by the public. Most areas of the park are considered Aboriginal land under the ALR Act which is leased to the Director of National Parks or is otherwise land that is under discussion for a claim to traditional ownership under the ALR Act (Figure 5).

The majority of the area that was to become a part of the Stage One of Kakadu National Park was given to the Kakadu Aboriginal Land Trust (KALT) under the ALR Act in August 1978 with the KALT and the Director signing a lease agreement for the land to be managed as a national park in November 1978 (Director of National Parks 2016). Stage One was therefore declared on April 5, 1979 and included the leased land and the land that was to be used for the development of the town Jabiru (Director of National Parks 2016).

Stage Two was confirmed on February 28, 1984. Prior to its declaration, a land claim was applied for in March 1978, under the ALR Act for the land that was to be included in Stage Two of the national park (Director of National Parks 2016). The land claim was partially successful with three areas in the eastern part of Stage Two given to the Jabiluka Aboriginal Land Trust (JALT) in 1986. Subsequently, a lease between KALT and the Director of National Parks was signed in March 1991. Simultaneously, the rest of Stage Two was subject to 'repeat' land claims under the ALR Act (Director of National Parks 2016). The land may also be converted to Aboriginal land during the course of this plan and would therefore be leased to the Director.

June 1987 brought upon a land claim lodged for the land in the former Goodparla and Gimbat pastoral leases that were to be a part of Stage Three of Kakadu (Director of National Parks 2016). Later incorporated to this land claim were the other areas to be included in Stage Three which included the Gimbat Resumption and the Waterfall Creek Reserve. Stage Three of Kakadu National Park was acknowledged on June 12, 1987, and continued to progress on 22 November 1989 and 24 June 1991.

Figure 5: Aboriginal land and land claims in Kakadu National Park from April 2014 (Director of National Parks 2016).

Uluru-Kata Tjuta National Park

Uluru-Kata Tjuta National Park is located in central Australia, 470 kilometres south-west of Alice Springs (Figure 6). It covers approximately 1325 square kilometres which includes the Ayers Rock Resort at Yulara, adjoining the park's northern boundary. The main features in this national park are the iconic landmarks of Uluru and Kata Tjuta.

Uluru is made of sedimentary rock called arkose sandstone (Director of National Parks 2010:11). It has a circumference of 9.4 kilometres and is approximately 340 metres from the ground. Kata Tjuta contains 36 rock domes of differing sizes and is made of a sedimentary rock called conglomerate (Director of National Parks 2010:11). The tallest of these domes is around 1066 metres above sea level making it the highest feature of the park. These contrasting monuments, along with its sandy environment, presents a landscape that is culturally significant to Anangu and considered iconic to the broader Australian public.

The archaeological elements and cultural traditions of Uluru-Kata Tjuta National Park are well renowned, leading to its inscription on the World Heritage List under the World Heritage Convention for its natural and cultural values. The traditional owners within Uluru-Kata Tjuta National Park have always associated their culture with the area (Layton 1986). Its cultural landscape embodies the relationship between traditional Anangu methods and natural landscape, as governed by *tjukurrpa* (Layton 1986). Their tradition of *tjukurrpa* emphasises spiritual understanding as well as a detailed understanding of the land and its resources (Arnold 2003). Although it has many meanings, *tjurkurrpa* honours every aspect of the 'country' and determines the rules of Anangu society; it dictates their ceremonies, daily lives and relationships (Arnold 2003:18).

There are a multitude of significant sites in Uluru that adds to its expansive historical and cultural context. The way these sites are interconnected through *iwara* (tracks) of the Aboriginal ancestral beings is what makes these sites so significant (Layton 1986). The rock art found throughout the base of Uluru, in conjunction with the rock shelters, also presents the spiritual and cultural significance of the site (Layton 1986). Although

there are fewer rock art sites at Kata Tjuta, the stone arrangements and rock engravings continue to impart their significance.

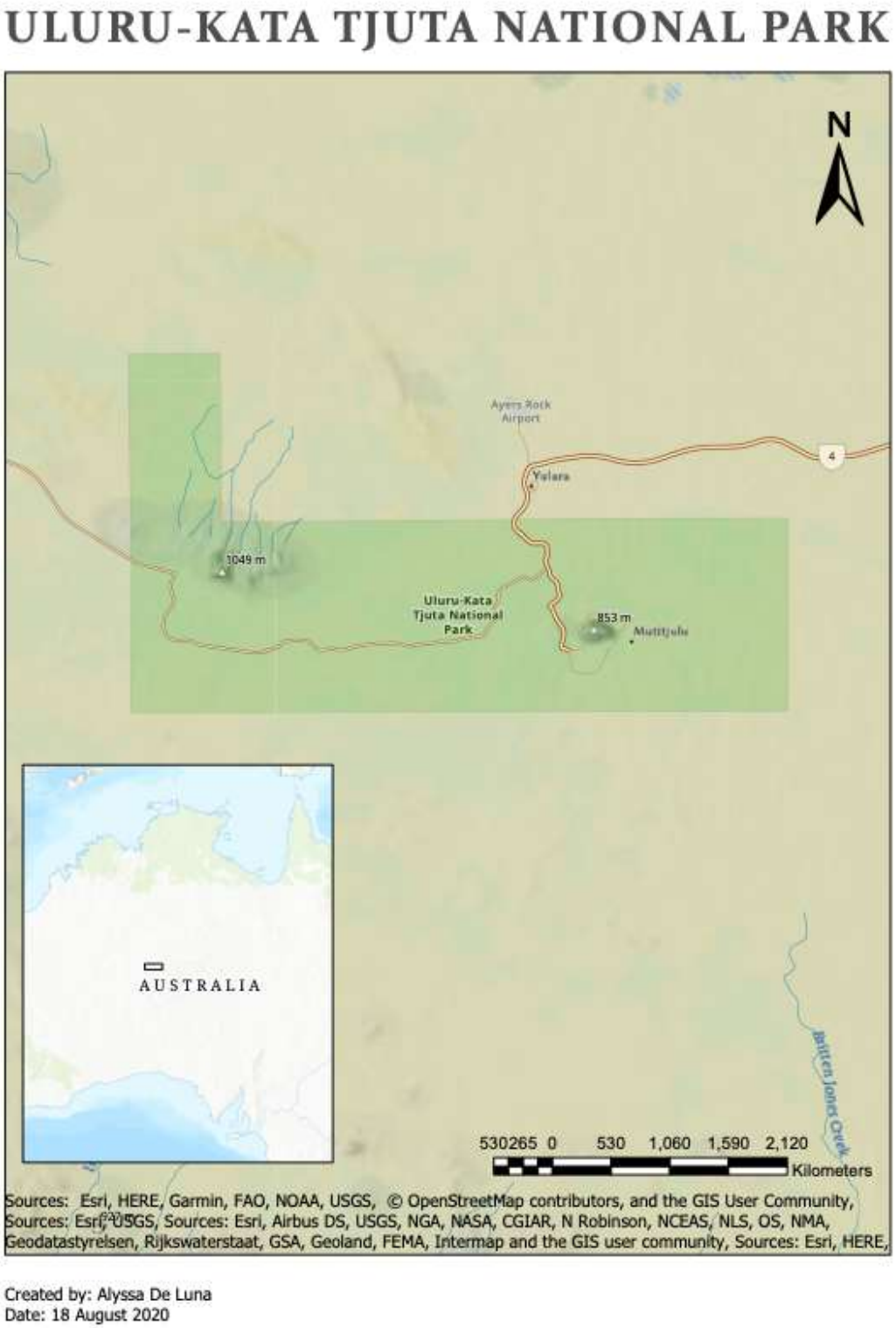

Figure 6: Uluru-Kata Tjuta National Park.

Natural Environment

Despite being located in the middle of the desert, Uluru-Kata Tjuta National Park still contains a varied ecosystem which includes plants that have adapted to the sandy soil and long dry spells. While the landscape may appear lifeless for most part of the year, it is after the heavy rains in the summer months that it revives and blooms; during the time that the northern most part of Australia is prone to daily thunderstorms and hurricanes.

Uluru-Kata Tjuta National Park is home to at least four different types of country: the mulga flats, open sand dunes, rock hills and the trees that surround rock faces such as Uluru (Layton 1986:17). As a semi-desert country, there is a variety of environmental features. The open country, for example, contains sandhills that alternate with low-lying flats and plants that are adopted to the dry environment (Layton 1986). Spinifex, desert oaks and small scrubs growth throughout the sand dunes with mulga also growing in the flats.

The natural landscape would not be complete without the monolith that is Uluru (Figure 7). This large rock formation is filled with deep vertical and parallel crevices and contains numerous little valleys, ravines as well as a hidden lake (ICOMOS 1994). Comprised entirely of sandstone, Uluru is full of feldspar that settled following the erosion of granitic mountains that have since disappeared (Ildos and Bardelli 2001:203).

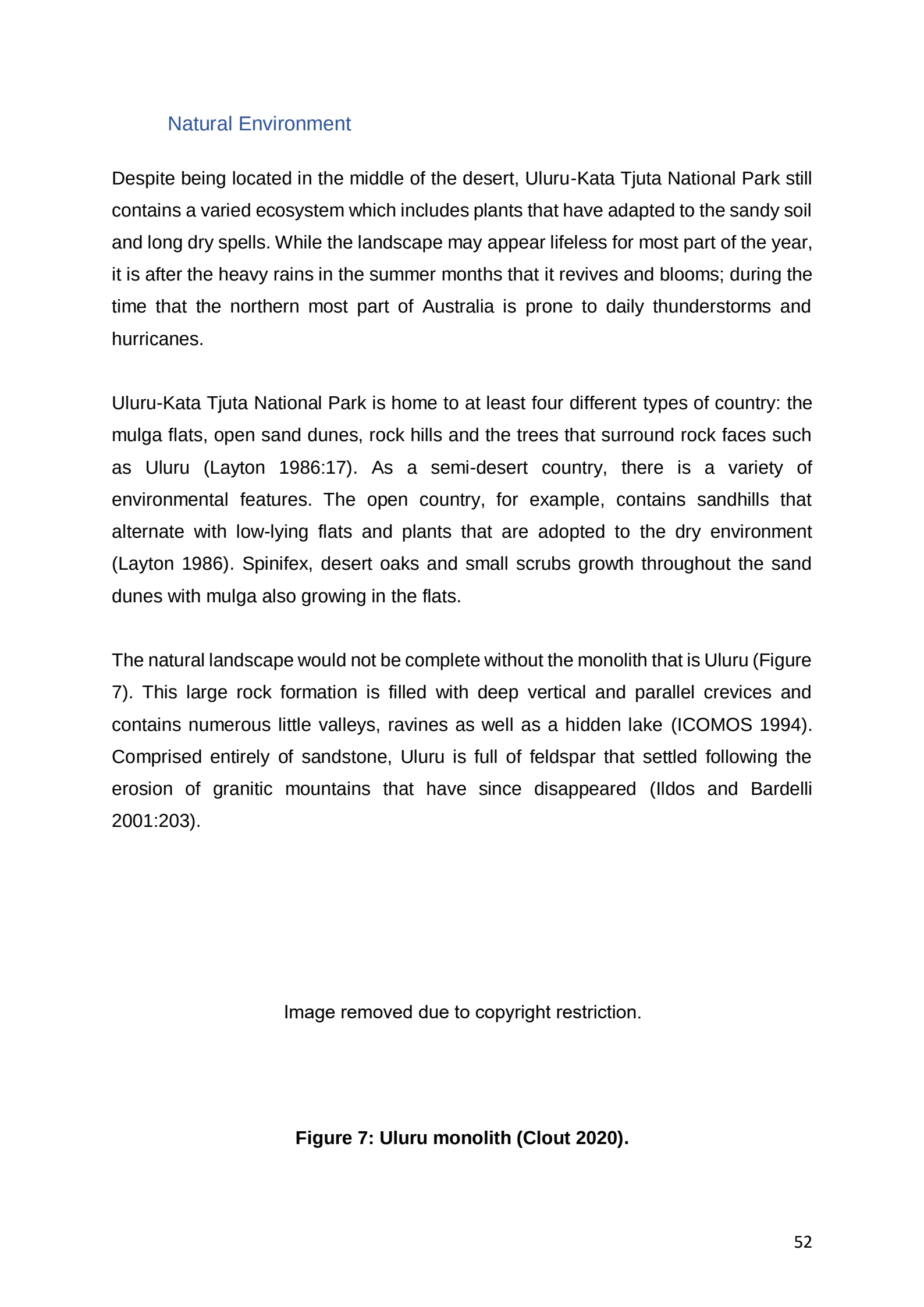

Figure 7: Uluru monolith (Clout 2020).

Cultural Landscape

Uluru-Kata Tjuta National Park's cultural landscape represents the combined efforts of Anangu and the environment as this landscape is a large part of the outcomes of thousands of years of management using traditional Anangu methods directed by *tjukurrpa*[2]. There are also hundreds of rock art sites at the base of Uluru that are of significance as they are also connected by the *iwara* of the Aboriginal ancestral beings (Director of National Parks 2010:5). These two sites present archaeological evidence of the actions, artefacts and stories of the ancestral heroes as a part of the Anangu creation stories (Layton 1986).

Uluru's inscription into the World Heritage List exemplifies its natural and cultural values. As one of the few sites listed under the World Hertiage Convention for both its cultural and natural values, Uluru-Kata Tjuta National Park in part received its recognition from *tjurkurrpa* (see footnote) as a traditional value that linked Anangu to their Country due to the acknowledgement of the importance of the National Park itself (Director of National Parks 2010:15).

[2] As noted previously, Anangu culture has its roots in the *tjukurrpa*, which is sometimes referred to as the 'Dreamtime'. These were recorded through rituals and songs, providing a detailed description of their stories and myths (Layton 1986:3). As such, traditional Aboriginal law states that each group is to look after the *tjurkurrpa* and the sacred sites as created by their ancestral heroes in its estate, passing down traditional songs, stories and rituals through each generation to memorialise the adventures that their ancestors travelled through in that area (Layton 1986:12). The application and maintenance of *tjukurrpa* is of utmost importance as it ensures the proper care and respect of the national park.

Traditional Owners–Anangu

Anangu is the word used to refer to the Pitjantjatjara and Yankuntjatjara Aboriginal people from the Western Desert regions of Australia (Figure 4). As the point where several Aboriginal ancestral groups cross each other, Uluru, along with Atila and Kata Tjuta, was and is the base area of a descent group made of several families and were the focus of these families' traditional estates (Layton 1986:12).

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Figure 8: Anangu men dance to celebrate the opening of Uluru's Talinguru sunrise viewing platform (Curl 2010).

Anangu have occupied and maintained the area surrounding Uluru and Kata Tjuta for thousands of years and continue to do so as part of the joint management team in Uluru-Kata Tjuta National Park (Taylor 2001). Through the establishment of kinship and family ties, Anangu have always been able to refer to themselves as 'one people', creating and discussing the economic, social and religious responsibilities of the group (Taylor 2001).

Their employment as a part of Uluru-Kata Tjuta National Park's joint management takes into account their social and religious obligations, often honouring their religious and cultural responsibilities by adapting their work requirements (Director of National Parks 2010b). Furthermore, the traditional owners ensure they are keeping with *tjukurrpa* by preventing the wrong people, whether men, women, visitors or certain

members of their group, from gaining certain knowledge or access to significant and sacred sites (Director of National Parks 2010b). Their religious responsibilities involve caring for this information as well as looking after cultural sites that are on ancestral tracks; where events, known only to Anangu, have taken place.

As the Aboriginal communities live within fairly close proximity to the park (Figure 9), Uluru-Kata Tjuta National Park holds significant management measures to assist Anangu in continuing to protect *tjurkurrpa* while also allowing visitors to enjoy and experience the park. This ensures that one of their main objectives, to enhance visitor knowledge and appreciation, is being applied with culturally appropriate behaviour being a part of the experience of visiting a jointly managed national park.

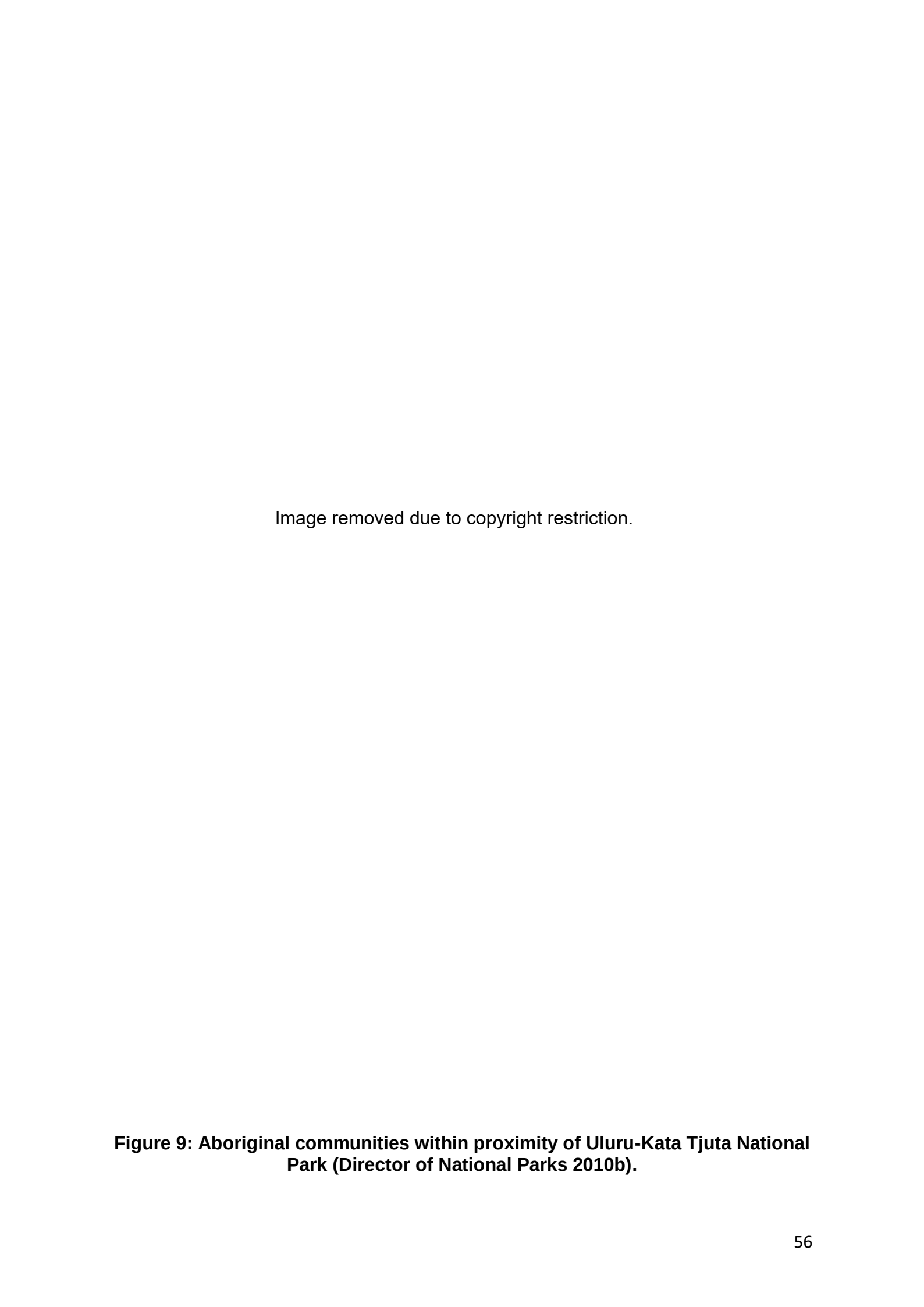

Figure 9: Aboriginal communities within proximity of Uluru-Kata Tjuta National Park (Director of National Parks 2010b).

Park Establishment

Uluru-Kata Tjuta National Park became the first area to be declared under the NPWC Act, with the name Uluru (Ayers Rock–Mount Olga) National Park. Upon the replacement of the NPWC Act by the EPBC Act in 2000, the park was therefore moved into the new Act. This declaration was reinstated in October 21, 1985, and included an additional area of 16 hectares (Director of National Parks 2010b). It was throughout this period that Anangu presented their desire to be a part of the park and its management, giving suggestions for protective fencing around sacred sites as well as permission for houses to be built for their elders to camp at Uluru to teach young people (de Lacy 1994) .

In February 1979, the Central Land Council lodged a claim under the ALR Act on behalf of the traditional owners for an area of land that included the park. However, the Aboriginal Land Commissioner at the time, Mr Justice Toohey, could not claim the land as it was no longer considered unalienated Crown land due to its proclamation in 1977 (Director of National Parks 2010b). Subsequently, the claimed land north east of the park is now considered Aboriginal land and is held by the Katiti Aboriginal Land Trust. Furthermore, on October 26, 1985, the Governor-General formally gave title to the park to the Uluru-Kata Tjuta Aboriginal Land Trust. The official Board of Management was established on the 10th of December 1985 with the first meeting being held on the 22nd of April 1986. The park's official name was changed to Uluru-Kata Tjuta National Park in 1993 at the request of both Anangu and the Board of Management (de Lacy 1994).

Chapter 4: Study Area–United States National Parks

The two United States national parks chosen for this research project are located in the Sierra Nevada, on the western coast of the United States, within California. Sequoia National Park and Yosemite National Park both have an expansive natural landscape that showcases the success of their national park regimes. Their Indigenous archaeology evidences the significance of the park for Native Americans. Their culture and beliefs are diverse and provide the parks with guidance towards the care and protection of the natural environment. This chapter will exhibit the cultural history of the Native Americans within these parks along with its environmental landscape. The national park's foundation and inaugural establishment will also be discussed subsequently.

Sequoia National Park

Sequoia National Park is found in the southern Sierra Nevada, east of Visalia, California. It covers an area of 163 519 hectares filled with forested mountainous terrain (Figure 10). The park also contains the highest point in the contiguous United States, Mount Whitney, which peaks at 4421 metres above sea level (National Park Service 1986:6). The park is also known for its giant sequoia trees, where the park's namesake resides, and includes the General Sherman Tree, the largest tree on Earth. Sequoia National Park's giant Sequoia forests are part of the 81 921 hectares of old-growth forests combined to create both Sequoia and Kings Canyon National Parks (National Park Service 1986). Their establishment presented a means of preserving the landscape that is still similar to the southern Sierra Nevada as it was prior to European invasion and settlement.

Sequoia National Park's environmental landscape varies from open savannah and chaparral on the foothill slopes to forests of ponderosa pine and giant sequoia, red and white fir, lodgepole pine, mixed subalpine and foxtail pine. There are also areas of plant communities of mountain crags, alpine meadows and boulder fields. The

elevated areas of Sequoia can also be characterised by its variety of lakes and streams. The eastern area of the park consists of the alpine headwaters of the North Fork of the Kern River, the glacial trench of its canyon and the Sierra Crest that runs north to south, forming the eastern boundary of the park (National Park Services 2011). This area, which is approximately two-thirds of Sequoia National Park, is designated wilderness.

The park also contains the archaeological elements and cultural traditions of Native American groups. Approximately seven percent of the park's entire acreage has been surveyed for the presence of cultural resources with inventories dating from the late 1950s (National Park Services 2011). Its archaeological presence spans between 5000 to 7000 years with archaeological resources documenting pre-contact, historic and contemporary use throughout the park (Basgall 1989). Its cultural landscape showcases the cohesive relationship between nature and the Native American groups that inhabited Sequoia National Park and for whom it is still culturally significant.

The park's heritage and its archaeological record is illustrated by the range of significant sites with a large number of rock art sites located on the lower foothills bordering the San Joaquin valley (Basgall 1989). Similarly, Owens Valley, located on the north eastern side of the Sierra, contains a multitude of petroglyphs that exhibit indistinct curvilinear figures and animals such as mountain sheep and other quadrupeds (Steward 1933).

Figure 10: Sequoia National Park Map.

Natural Environment

The Sierra Nevada, on which Sequoia National Park is located, was thought to have been moulded through the detachment and uplifting of a portion of the earth's crust which resulted in a batholith that tilts to the west and is separated by deep canyons (Barbour and Major 1988). Its topography ranges from 1500 feet from the southwestern boundary to 14 495 feet at the apex of Mt Whitney on the eastern crest (Barbour and Major 1988). The National Park's land surface has deep erosion marks due to streams and glacial actions.

Through Sequoia National Park, the preservation of native wildlife comes from the habitat protection and ensures Sequoia's biological significance. Although the wildlife within the park is not any different from those found in its surrounding lands, those lands continue to go through changes in development which increases the importance of the wildlife protection found within Sequoia National Park. The multitude of floral and faunal communities within the park support the diversity of wildlife species as both the year-round residents and migratory visitors (Hall 1991).

The varying climates and environmental landscapes support a rich assortment of plant communities. The interrelated and co-dependent ecosystems, due to its microenvironmental conditions, give Sequoia National Park, and the Sierra Nevada in general, a very unique diversity. The main natural attraction of this area, the sequoia trees, do not grow throughout the forest belt but are geographically limited in areas called groves (Hall 1991). As the only current home of the sequoia trees, the Sierra Nevada has approximately 75 separate groves. The 39 named groves in Sequoia National Park and its neighbour the Kings Canyon National Park comprise of about one third of all naturally growing sequoias (Hall 1991).

Sequioa National Park's importance is not limited only to sequoias as it contains extensive tracts of Sierran mixed conifer forests that surround the sequoia groves (Figure 11). This tract covers much of the southern part of the Sierra and has significant resources due to its expansive natural reserves giving it both a high recreational value and scientific value (Barbour and Major 1988). The remainder of the park is described as High Sierra as majority of its area is above 9000 feet in altitude

(Barbour and Major 1988). This landscape is filled with rugged, ice-sculptured ravines and sparsely wooded lake-jewelled basins (Barbour and Major 1988). These, too, have a high recreational and scientific value due to its expansive wilderness and environmental development.

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Figure 11: Giant sequoias in Sequoia National Park (Sequoia and Kings Canyon National Park 2020).

Cultural Landscape

Within Sequoia National Park there is also a unique record of pre-contact and historic sites. Archaeological surveys that were conducted from 1997 to 2004 in the higher elevations of Sequoia National Park recorded 88 sites in the area with seasonal occupation in the alpine and subalpine zones being documented (Burge 2010:1). Throughout this area a variety of flaked stone artefacts and other lithics were found, as well as pieces of pottery (Burge 2010:3). Several large sites that contained stone circle features were also found, clearly representing the foundations of shelters (Burge 2010:3).

These artefacts and architectural features dated to approximately 4800 years ago thereby exhibiting the length of occupation within these areas (Burge 2010:5). As such, heritage places are showcased throughout Sequoia National Park through sites, structures and landscapes used by Native Americans. Historic villages, campsites, rock art sites and traditional plant gathering areas are found throughout the park, some of which can be visited upon entrance (National Park Services 2011).

There are four categories within Sequoia National Park that are considered a part of its cultural landscape: Historic Designed Landscapes, Historic Vernacular Landscapes, Historic Sites and Ethnographic Landscapes (Bancroft et al. 1999:128). Throughout these cultural landscapes, 312 pre-contact sites and 110 historic sites were found and surveyed and are illustrative of the plethora of culture and tradition found within Sequoia National Park (Bancroft et al. 1999:125). The protection and conservation of these sites are a significant inclusion with Sequoia National Park management plans, ensuring that the historical and archaeological heritage of the native Indigenous groups within the Sierra Nevada continue to be preserved.

Traditional Owners–Tubatabel and Monache

The two Indigenous groups connected to Sequoia National Park are the Tubatabel, who resided in the Kern River drainage area, and the Monache, who lived near the Kaweah River drainage (Vankat 1977:19). Their occupancy started at approximately 1000 AD until 1400 AD (Vankat and Major 1978:378). The majority of the Indigenous camping and village sites were on the bases of the western area of the park with the mid-elevated hills being used seasonally and the higher elevated foothills only used sparingly (Vankat and Major 1978:378). The Tubatabel occupation within the Kern River area was likely infrequent as only a few high elevation campsites were found (Vankat 1977:19). Comparatively, the Monache group in the Kaweah River drainage had a greater impact. Their population was estimated to be around 2000 upon the first contact with Europeans (Vankat 1977:19).

The traditions of both the Tubatabel and the Monache are significant within their cultures and are still being taught today. Their practices and beliefs have continued to be passed down generationally from their elders who hold extensive knowledge and experiences of their cultural traditions (Warren 2002:119). Their traditions and culture continue despite the 200 years of resistance to Euro-American appropriation of their land and resources (Anderson and Moratto 1996:192). Most of the native groups have created business through their tribal councils with some tribes owning and operating their own museums (Anderson and Moratto 1996:192). Their traditions and languages continue on as language is closely tied to the managing of their traditional knowledge.

Despite invasion and colonisation, the traditional elders still share their knowledge about past and former traditional plant uses and management practices. Although they have no official management over the national parks, the Indigenous groups have assisted and supported the national park rangers with regards to their burning practices and environmental protection (Anderson and Moratto 1996).

Park Establishment

The establishment of Sequoia National Park occurred in 1890 as a way to protect the sequoias and the river regions from people wanting to profit from these natural resources (Figure 121) (Strong 1964:138). Sequoia National Park was the first national park created to protect a living organism – *Sequoiadendron giganteum* and was ultimately expanded to its current boundaries in 1926 (McClaran 1989:3). The earliest European exploitation of the area began with Captian Charles You in August 1903 when a road was created through the Giant Forest for easier vehicle access (National Park Services 2017). As the popularity of automobiles travel grew in the early 1900s, the Generals Highway was built in 1926 which led to increased visitation.

Figure 12: Giant Sequoia Tree Photo Pose, Sequoia National Park, Tulare County, Calif., ca 1920 (Baird 1920).

Yosemite National Park

Yosemite Valley is only a mile wide and seven miles long yet is considered a marvel in the natural world. Yosemite National Park is located on the western side of the Sierra Nevada in central California, between Sierra National Forest in the south and Stanislaus National Forest in the north (Figure 13). It covers an area of 3029 kilometres square and is located within four counties – Tuolumne and Mariposa, Mono and Madera County. As one of the largest and least fragmented habitat areas within the Sierra Nevada, Yosemite provides protection to a diversity of plants and animals (Storer and Usinger 1963). It has an elevation ranging from 648 to 3997 metres and has five major vegetation areas that contain a variety of flora and fauna (Storer and Usinger 1963). The park also contains habitat suitable for over 160 rare plants as well as rare geological formations and soils that assist with the plants growth and stimulation (Storer and Usinger 1963).

The term 'Yosemite' means 'killer' in the Miwok language, a Native American group Indigenous to Northern California, and refers to the name of the tribe that was driven out of the area by the Mariposa Battalion in 1851 (National Park Service 2018). The area was previously known as 'Ahwahnee', meaning 'big mouth' by the Indigenous groups of the area (Greene 1987). The desire to preserve this area dates back over a hundred years with Yosemite Valley being the original inspiration behind the concept of a national park, although this 'first' ultimately fell to Yellowstone National Park (Greene 1987). It was in 1864, when Abraham Lincoln signed a bill of law that guaranteed the protection of Yosemite Valley and the forest of sequoia in the south, that ensures the conservation of both the natural resources and the cultural landscape of Yosemite National Park (Greene 1987).

Yosemite National Park has two distinct purposes with regards to its management. The first looks at the preservation and conservation of the resources that add to the park's uniqueness, ensuring that the environment and its wildlife continue to be diverse and protected. It also looks to protect the area's heritage and cultural resources, specifically those relating to the Native Americans who continue to live in the area. Its second purpose involves the enjoyment, education and recreation of visitors who wish to use the many available resources that Yosemite has to offer.

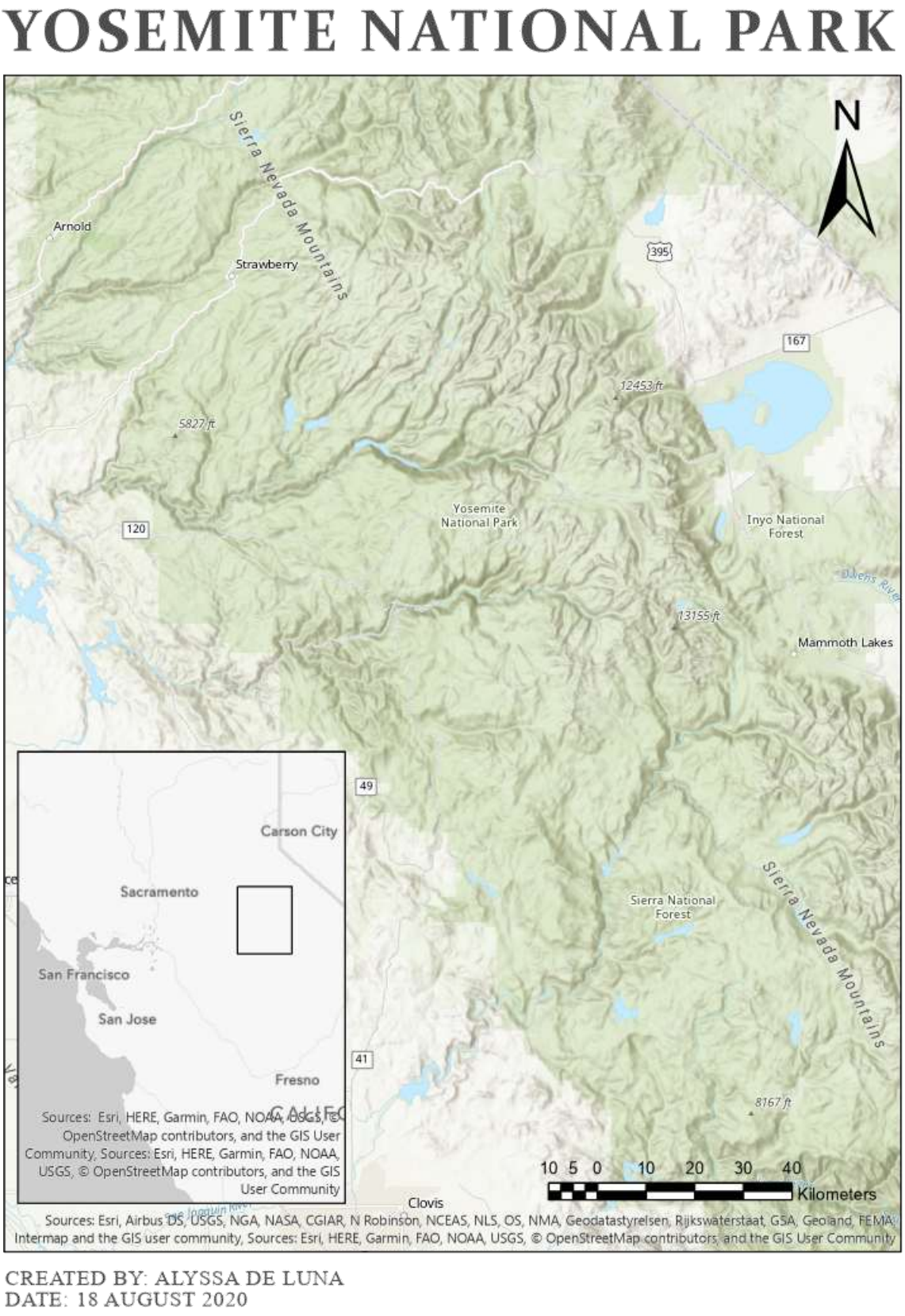

Figure 13: Yosemite National Park Map.

Natural Environment

Yosemite Valley is known as exhibiting a classic example of a glacier valley with its perfect ‘U’ shape (Figure 14). The alpine glaciers carved by the Merced River flow slowly into the canyon and leave behind steep lateral slopes and a flat valley (Storer and Usinger 1963). The area was once occupied by Lake Yosemite, a weir valley formed heading upstream from the ending rubble of the glacier that subsequently disappeared after being filled by sediment (Ildos and Bardelli 2001:254). The granite slopes were carved the ice of the glaciers which left the hardest sections whole and therefore led to the monoliths known as Cathedral Rocks and El Capitan (Muir 1907). El Capitan measures around 3591 feet from the base of the summit and is popular among free climbers from all over the world.

The Half Dome, a known symbol of Yosemite National Park, is renowned for its abnormal profile. It looks similar to a cupola but is perfectly worn down in half due to the passage of the glacier (Ildos and Bardelli 2001:255). Additionally, the tallest falls in North America are found in Yosemite National Park. Known as Yosemite Falls, it is 2424 feet tall and can be seen from their lookout at Glacier Point. The Bridalveil Falls, a smaller set of waterfalls, was named by the Ahwahneechee as Pohono, known as spirit of the wind, due to the large gusts of wind that drive the water from the rock face and create gleaming spurts (Grayson 1991). Upon springtime, the vegetation throughout the park blooms with flowers, forests of conifer and oaks found everywhere.

The most well-known floral species in Yosemite National Park is the Grizzly Giant, a large sequoia tree that is around 2700 years with a height of 213 feet and a base diameter that measure up to 30 feet (Ildos and Bardelli 2001: 255). It is located in Mariposa Grove which is home to the largest grove of sequoia trees in Yosemite National Park. The natural landscape of Yosemite National Park was also a significant part of the Indigenous culture and traditions (Bloom and Deur 2020). The Indigenous groups from the Yosemite Valley have living traditions that continue on through the Indigenous elders are shared both with the younger members of the group (Bloom and Deur 2020). It is a place of cultural and social significance within the Indigenous community and reflects the connection between humans and the environment.

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Figure 14: Yosemite National Park Environmental Landscape (Lange 2015).

Cultural Landscape

Yosemite National Park has a significant cultural landscape. Archaeological evidence located in the Wawona Valley showcases the occupancy of the Yosemite area by the Miwoks (see later sections for more information), exhibiting the cultural traditions and rituals that were a part of their prehistoric lives.

The precontact remains included projectile points, which were bifacially worked stone tools that had sharp points and cutting edges (Whittaker and Huckell 1981). They were usually symmetrical and were likely placed onto a spear or arrowshaft due to their size. There were also drills and gavers, tools that could have been used for drilling and incising a variety of materials such as wood, bone, antler or shell (Whittaker and Huckell 1981). Scrapers were also found; a common tool type that was retouched with short steep flakes (Whittaker and Huckell 1981). These tools were used for smoothing and planning wood, antler or bone as well as scraping and cutting into soft materials. There were other flaked stone tools found throughout the Wawona Valley that included a small obsidian flake, quartz crystal as well as a large flake of silicified limestone

(Whittaker and Huckell 1981). All these artefacts exhibit a culture that included hunting and gathering within their daily lives and used their environment in the most efficient ways possible.

The distribution of Ahwahnachee and other Native American groups within the Sierra Nevada was influenced by environmental and cultural factors. Regionally, the population densities were more frequent and 'permanent' at elevations below 1000–1250 metres (Anderson and Moratto 1996:191). Higher altitude sites were only naturally occupied during the warmer seasons. Population densities were also higher on the western side of the Sierra Nevada range (Anderson and Moratto 1996:191). As shown by these broad patterns, the populations were geographically diverse with each area containing variables such as terrain, biotic diversity, availability of water and access to stone for toolmaking (Anderson and Moratto 1996:191).

The number of people within particular sites ranged from small numbers to a few hundred within larger villages. Those with fewer numbers were likely men that had formed a hunting camp whereas the large villages incorporated a mixed number of women and men as well as children which led to the creation of their communities (Carroll 2014). Late pre-contact Sierran people were separated into 'village communities' which involved a principal village led by a chief and a number of smaller settlements (Carroll 2014). Their traditions and cultures often differed depending on which village the person came from; however, they were distinct in the significance of their traditions. These traditions were passed down through generations and still continue on today although with less members than before.

Traditional Owners–Ahwahneechee

The Ahwanachee group were and are part of a larger cultural and linguistic group referred to as the Southern Sierra Miwok (Spence 1996:31). They were the most closely associated with the Yosemite Valley upon the establishment of the national park (and still continue to be) although there is no foundational relationship between park management and the Ahwahnachee (Spence 1996: 31). The Ahwahnachee frequently communicated with the other Miwok tribes as they traded and married with them along with the Mono-Paiutes from the eastern side of the Sierra Nevada (Spence

1996:31). American Indian Yokuts located in the Central Valley, as well as other Native Americans from the coast, mixed with the Ahwanachees prior to the 1850s thus creating an intermingling Yosemite Indian culture (Spence 1996:31).

Despite keeping their traditional customs, the Ahwahnachee also continued to contribute to the tourist economy as more people visited the Yosemite Valley (Figure 6). Their presence in Yosemite also depended upon their employment as members of hoteliers and concessionaires (Bradley 2016:14). As part of hotel staff, the Ahwahnachee worked by chopping wood and putting up hay as well as serving as guides for visitors. Their most popular job involved supplying fish and game to large tourist parties as the visitors were usually unable to catch anything. Native women worked in the homes of concessionaires as their au pairs or in hotels as maids and washerwomen (Bradley 2016:15).

Figure 15: Ahwanachee people during the 1850s (Yosemite Research Library 1887).

Park Establishment

Upon signing the Yosemite Land Grant into law in 1864, President Abraham Lincoln bequeathed Yosemite Valley and the Mariposa Grove to the state of California and named Galen Clark, a hotel owner and the first European male to 'find' the Valley, Yosemite's first Guardian; a position he kept for almost 35 years (Yosemite National Park Trips 2017). However, John Muir, an environmentalist and conservationist, believed that state protection for Yosemite Valley and Mariposa Grove was not enough and so decided to write about Yosemite in magazines and newspapers reaching audiences across the United States (Yosemite National Park Trips 2017).

Muir wrote about the destruction of Yosemite's ecosystem and that despite the park's 'protected' status the grounds continued to be devastated by grazing livestock especially in the high country (Yosemite National Park Trips 2017). He also saw constant deforestation due to timber logging operations. Muir's constant writing for Yosemite as well as the Sierra Nevada created a national conservation movement that presented Muir with a chance to launch a campaign to make Yosemite a national park (Yosemite National Park Trips 2017).

This occurred in 1890 when the lands surrounding Yosemite Valley and the Mariposa Grove all became a part of Yosemite National Park (Yosemite National Park Trips 2017). The establishment of Sequoia and Kings Canyon National Park all occurred at around the same time to ensure the preservation of the giant sequoia forests found throughout the Sierra Nevada. However, Yosemite National Park, as it is known today, only came to fruition in 1906 when President Roosevelt took back control of Yosemite Valley from the state of California as exploitation of the park's resources was still extensive (Yosemite National Park Trips 2017).

Chapter 5: Methodology

Management plans have long been a fundamental part of the structural organisation of national parks. Over the years, national parks have continued to evolve and develop their management plans in accordance with legislation; ensuring that their plans and reports follow and address the relevant information as presented by the government. How these parks undertake the protection of Indigenous heritage sites is illustrated through the language used and its consistency within these management plans. In other words, they reflect on the prejudices that surround Indigenous groups and attempt to develop a plan that provides an impartial description of Indigenous heritage and an unbiased management regime process. The imposition of language during colonisation systematically prohibited the use of native languages (Shakib 2011). Similarly, the language of colonisation has been used to develop and describe certain aspects of important documents such as management plans. As such, the use of language by governments can be insightful and be a form of structural colonisation and violence (Shakib 2011). Furthermore, understanding the successes of these management plans is imperative when attempting to compare the severity of fires throughout the years.

With this in mind, this research project is divided into two distinct stages:

1. Historical and archival research; and
2. Language analysis.

Historical and Archival Research

Archival research intertwines information taken from primary sources with the scholar's preconceived philosophies to create new interpretations grounded in underlying disciplines and critical investigation (Gaillet 2012). Using scholarship from a multitude of disciplines creates a multi-pronged approach towards understanding the key issues related to the information at hand. It also creates a relationship between other researchers as their knowledge is used in collaboration to create new and

alternative approaches to the research methods, creating different ways to assemble and decipher data across multiple avenues (Gaillet 2012:45–46).

Archival research can involve the exploration of “legitimate” collections such as libraries or traditional assemblages as well as unorthodox collections such as media outlets and oral stories (Gaillet 2012). They are acknowledged as primary sources used to develop and form knowledge rather than just a place of storage for already identified information. That being said, the way these archives are used and interpreted depends on those that use it. Academics and scholars alike incorporate predetermined notions, opinions and experiences to their research which, when applied to archival research, increases the chances of its misinterpretation and misconception (Gaillet 2012:42). This is exhibited in heritage discourse which looks into the application of non-Indigenous perspectives into the heritage and culture of Indigenous groups (Smith and Waterton 2009). Despite the argument that heritage is a multi-faceted subject, there is still discourse around the different perspectives included when discussing heritage. This is caused by one interpretation that has the power behind it to make it significant (Smith and Waterton 2009:57).

The archival research undertaken for this thesis project involved examining the following topics: cultural burning; cultural significance of fire; Australian and American Indigenous use of fire; protection of cultural heritage sites; heritage discourse; Aboriginal involvement in national parks and any sources regarding national park management plans and policies in Australia and the United States. Legislation and policies were also collected to make sense of the procedures taken in creating these management plans. The collection of this information was aimed at developing a strong understanding about the relationships between Indigenous groups and government national parks.

Archival research involved collecting management plans created for Kakadu National Park, Uluru-Kata Tjuta National Park, Sequoia National Park and Yosemite National Park. Management plans dating as far back as possible were collected to find comparable information and to see the developments in these plans as a result of policy and government changes. Engaging with and using the annual reports from these national parks also assists in determining the differences between past and

current management plans. The following resources were therefore used to obtain information for this project:

- National park websites;
- Australian National Archives;
- Northern Territory State Library (and archives);
- State Library of South Australia;
- Australian Government: Department of Agriculture, Water and Environment website;
- Australian International Council on Monuments and Sites (ICOMOS);
- United Nations Education, Scientific and Cultural Organisation (UNESCO) World Heritage website;
- United States Environmental Protection Agency website; and
- Northern Australian Fire Information (NAFI).

These references were used to incorporate a variety of reports both significant and relevant to the development of management plans. That being said, while information taken straight for the source, such as having discussions with national park management would have also provided a plethora of information, the onset of COVID restrictions hindered a method that integrated more primary resources.

Language Analysis

The power of language can be observed through the effectiveness of management plans. It has the ability to influence the audience as Foucault explains, “power relations are both intentional and non-subjective… they are imbued, through and through, with calculation: there is no power that is exercised without a series of aims and objectives” (Foucault 1990:97). As such, the power and influence of language can never be understood independently, but rather as a significant part of a particular social situation (Shapiro 1984). However, it is not just power that is significant in language. The relationship between discourse and social structures can be seen through dialectical approaches and language discussions (Fairclough 2001). Fairclough (2001:31) also explains that the analysis of their relationship is important to understand their

differences and struggles, specifically how “control over orders of discourse by institutional and societal power-holders is one factor in the maintenance of their power”. Furthermore, discourse has been described as “a particular way of constructing a subject-matter” (Fairclough 2001:128) that exhibits the relationship between power and language through the creation of meanings and practices that emphasise certain avenues and interests over others.

Language is therefore essential for the consistent relations of power. It is where different forms of social organisation, as well as their possible social and political consequences, are analysed and discussed (Weedon 1997:21). As institutes present important acts that imply their authorisation, these acts become forms of discourse which lead to unjustifiable interpretations and possible conflict with minor groups (Linstead 1993). These reports and texts should be read as certain arrangements of established practices not just as configurations that have systems of interconnected meanings.

Language analysis was undertaken using NVIVO12™; a software program used for the analysis of different forms of information. The process of data analysis in NVIVO12™ involves a cycle procedure that starts with importing data into the software (Dollah and Abduh 2017). This is followed by exploring the data by identifying key words throughout the documents. As such, the key words are then located and collected throughout the documents which can then be used for language analysis (Dollah and Abduh 2017). Management plans, annual reports, government legislation and policies were collected and uploaded into the program where they were analysed; drawing out qualitative information and dividing them into specific themes. These chosen themes looked at the frequency of certain words such as heritage, fire, burning, Aboriginal tradition and protection–words that would be relevant to the protection of Indigenous heritage sites. Other topics that related to Australian Aboriginal peoples and Native Americans in their country’s management plans, especially with regards to their culture and heritage were examined. Below is a list of themes used to gather qualitative information about the protection of Indigenous heritage sites in relation to the use of cultural burning and the effects of bushfires. These themes were used based on their relation to the protection of Aboriginal heritage sites throughout the national parks:

- Indigenous responsibilities
- Frequency of certain words that relate to the protection of heritage sites–
    - Heritage;
    - Fire;
    - Burning;
    - Protection;
    - Tradition;
    - Aboriginal group name; and
    - Culture
- Climate change
- Relationship with Indigenous groups
- Cultural resource management (management of heritage sites)
- Fire detection/suppression

These themes were used to consider how national parks develop their management plans and effectively cater towards the protection of Indigenous heritage sites. Furthermore, the themes also consider the relationship between national parks and Indigenous groups, especially since most Indigenous heritage sites can only be accessed and protected by Aboriginal Australians and Native Americans. While there might be other words the can also be related to Indigenous heritage sites, these words were specific yet general enough to be incorporate in both country's management plans.

A variety of management plans that are relative and significant to the national parks were used during this language analysis. The 'General Management Plans' from Kakadu National Park and Uluru National Park will be used for analysis as it includes all aspects of the parks; it refers to heritage protection, fire management as well as the park's joint management. For the United States National Parks, the National Park Services management plans were included in the analysis as a general management plan that all national parks take into account when creating their management plans. For Sequoia National Park, their General Management Plan and Fire Management Plan was used to understand both heritage protection and fire management throughout the park. Yosemite National Park will have quite a few management plans;

it includes their General Management Plan, Fire Management Plan and two River Management Plans. This will ensure that the changes over the courses of these plans can be understood.

Methodology Limitations

The number of management plans available for the four national parks differed making it difficult to ascertain the regime developments over time in a consistent way. This prevents a holistic interpretation of each national park's intent to protect their Indigenous heritage sites; instead showcasing a small aspect of the park's progress regarding their fire management and heritage management regimes.

There are also limitations with regards to the use of NVIVO12™ software. As a data collecting software, NVIVO12™ can only be used when asking for specific types of data. As such, it does not interpret the data itself and is time consuming when attempting to use it. NVIVO12™ also requires a lot of time to understand and as such is why its method of data analysis is only recognised for its qualitative methods despite also having quantitative figures.

Chapter 6: Results

This chapter presents the results taken from the literary and language analysis using NVivo12™. This section begins with a presentation of the data relating to the frequency of a selected set of words considered to be indicative of heritage importance in each management plan. Subsequently, a thematic analysis is presented to show the relative importance afforded to heritage protection and fire management within each national park.

Word Frequency

The analysis of the frequency of significant words was undertaken using the NVivo12™ program to ascertain the relevance of both heritage related and fire related texts. Furthermore, understanding the frequency of these words elaborates on the relation of heritage to park management plans. As explained in Chapter 5, the analysis of language (including the stemmed equivalents of relevant words) shows the differences between certain parts of these management plans which will be outlined in these results.

Kakadu National Park

Three general management plans were used to assess the frequency of the words selected for analysis. The 1999–2004 management plan, the 2007–2014 management plan and the 2016–2026 management plan.

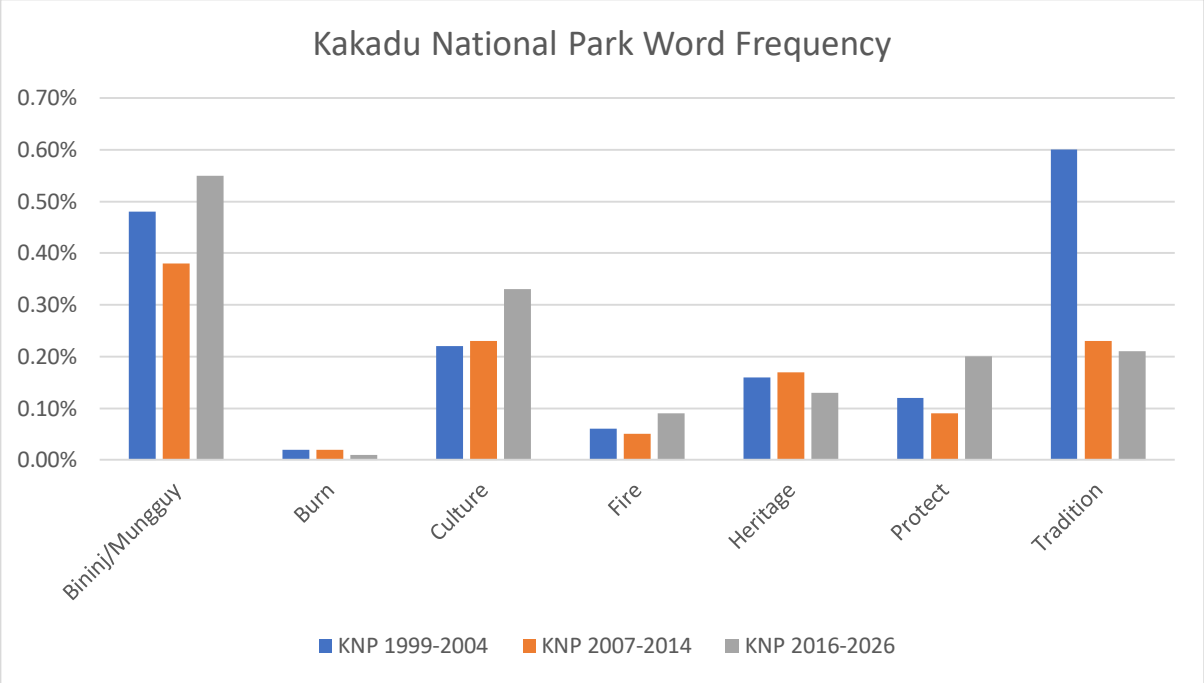

Figure 16: Kakadu National Park Word Frequency.

Figure 1 shows the frequency of words within each management plan. The words fluctuate in frequency throughout all three plans with no sense of growth apart from 'culture' (which rises in frequency within the three plans) and 'tradition' (which has a huge drop in frequency from 1999, with a 0.60% frequency to approximately 0.2% frequency in both the 2007 and 2016 management plans).

Uluru National Park

Two general management plans were used to assess the frequency of the chosen words. The management plans chosen were the 2000–2010 management plan and the 2010–2020 management plan.

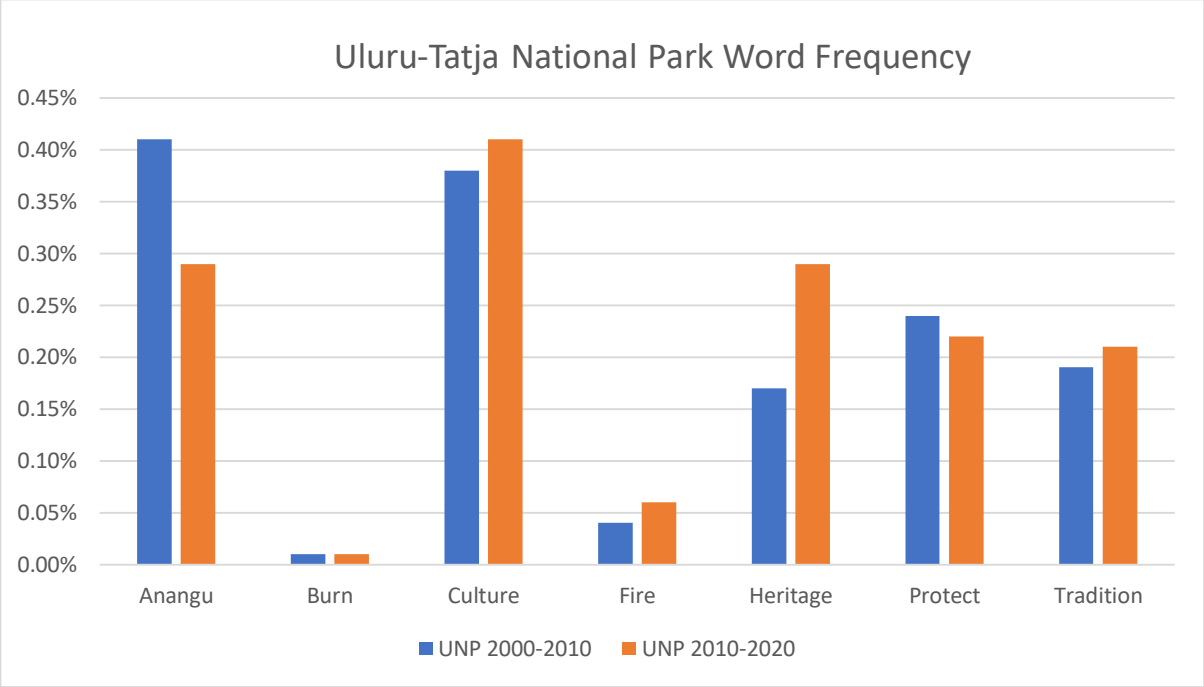

Figure 17: Uluru National Park Word Frequency.

As illustrated in Figure 2, most of the words had a higher frequency in the more recent management plan apart from ‘Anangu’ which drops by 0.12% and ‘burn’ which stayed consistent between both management plans.

National Park Services Management Plan

Both United States National Parks take these NPS General Management plans into account when composing their regimes. As such, finding the word frequencies within their two recent management plans would exemplify the use of these words throughout the other management plans being used within these parks. The 2001 and 2006 National Park Management Plans were used to provide comparisons.

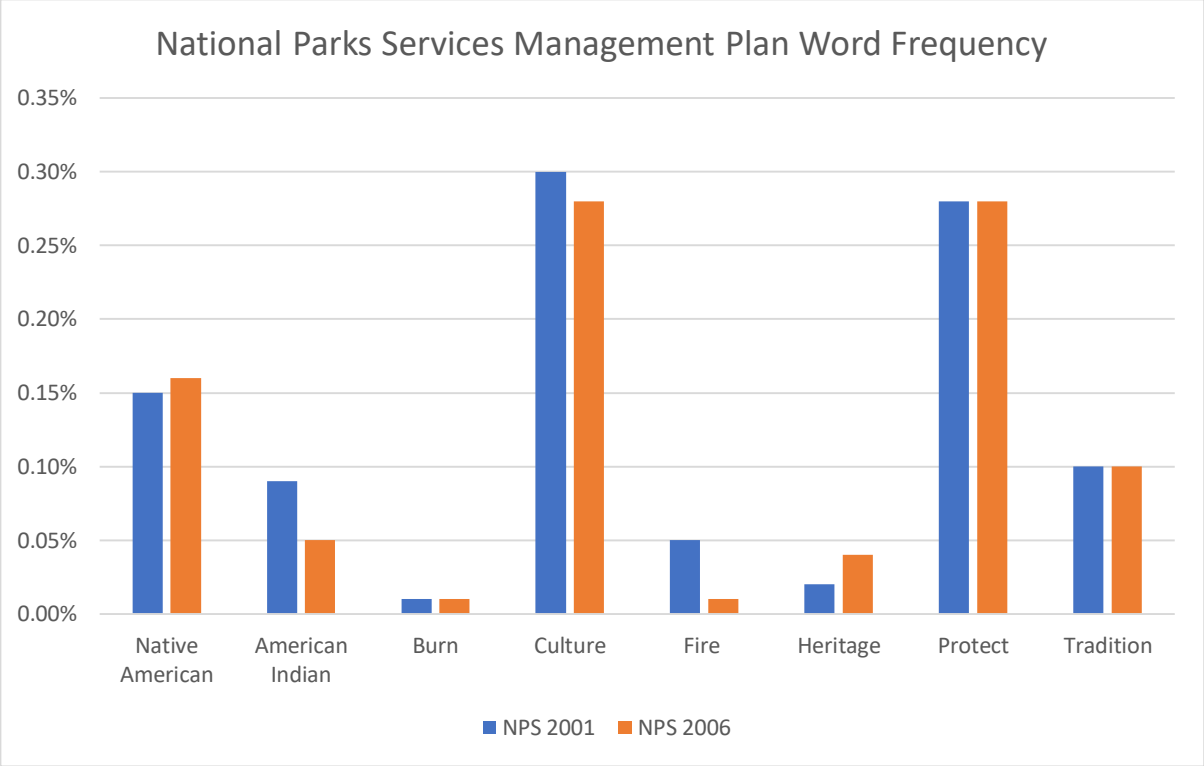

Figure 18: National Park Services Word Frequency.

The terms 'Native Americans' and 'American Indians' were used instead of specific tribal names as terms of relevance in this study as they were used in all national parks plans (Figure 3). Three of the analysed terms were equal in frequency throughout both management plans, these being 'burn', 'protect' and 'tradition'. A decrease of frequency could be found in the word's 'culture' and 'fire' at 0.02% and 0.04% respectively is evident. Apart from 'Native American', 'heritage' was the only analysed word that had an increase in frequency with a growth of 0.02%. The small changes in frequency between management plans exhibit the statistical insignificance of these words inferring the lack of inclusivity within these management plans.

Sequoia National Park

The two management plans used for Sequoia National Park were the 2012 General Management Plan and the 2011 Fire and Fuels Management Plan. Unfortunately, these two management plans were the only plans available for public access that were relevant to the study.

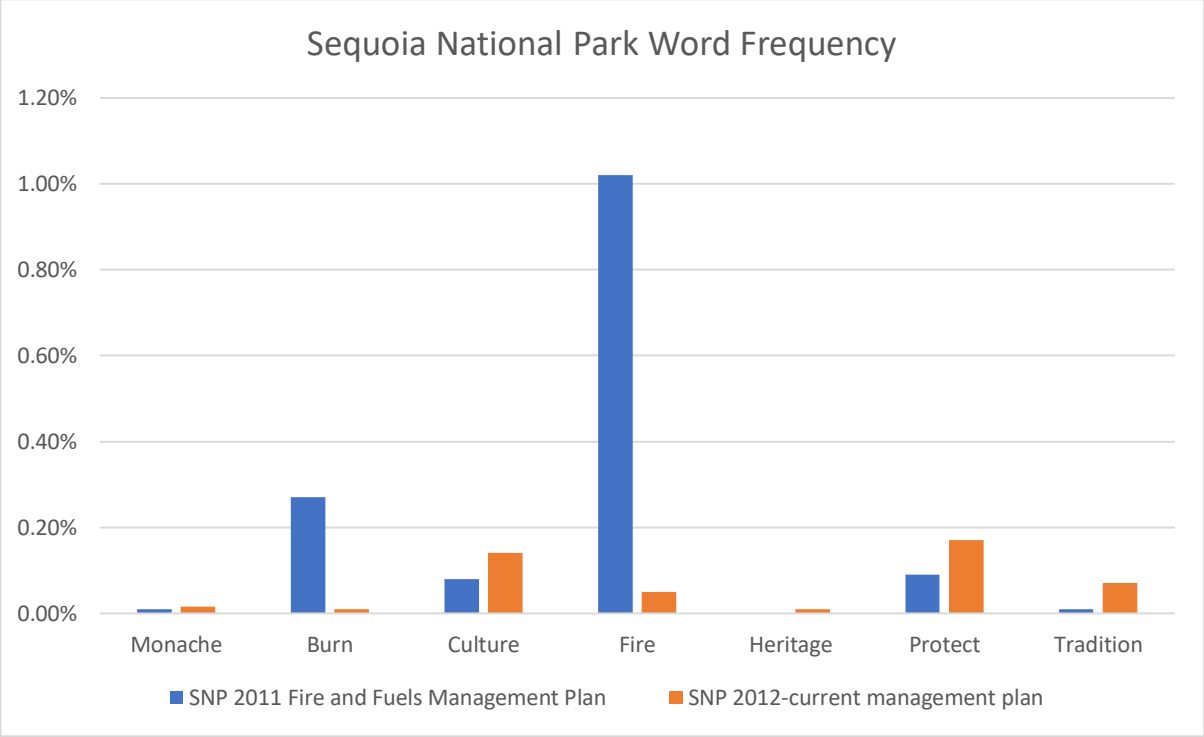

Figure 19: Sequoia National Park Word Frequency.

The word frequencies throughout both management plans reveal relatively lower percentages (Figure 4) in comparison to Australian results. However, there are slight increases between these management plans. The Native American group of Monache is referred to only twice in the 2011 Fire Management Plan and only a total of 15 times in the 2012 General Management Plan. 'Burn' and 'Fire' were the only words with a higher frequency in the Fire Management Plan than the 2012 General Management Plan – an occurrence that was to happen due to the topics being discussed within both management plans. 'Culture' and 'Protect' both have higher percentages within the General Management Plan. 'Heritage' has no mentions at all in the Fire and Fuels Management Plan and only has a 0.01% frequency mention in the 2012 management plan. Similarly, 'tradition' only has a 0.01% frequency in the Fire and Fuels Management Plan but does have a higher frequency in the 2012 management plan.

Yosemite National Park

The following management plans were identified for analysis:

- Yosemite General Management Plan 1980
- Yosemite Annual Fire Management Plan 2009

- Yosemite Tuolumne Wild and Scenic River Management Plan 2014
- Yosemite Merced Wild and Scenic River Management Plan 2014

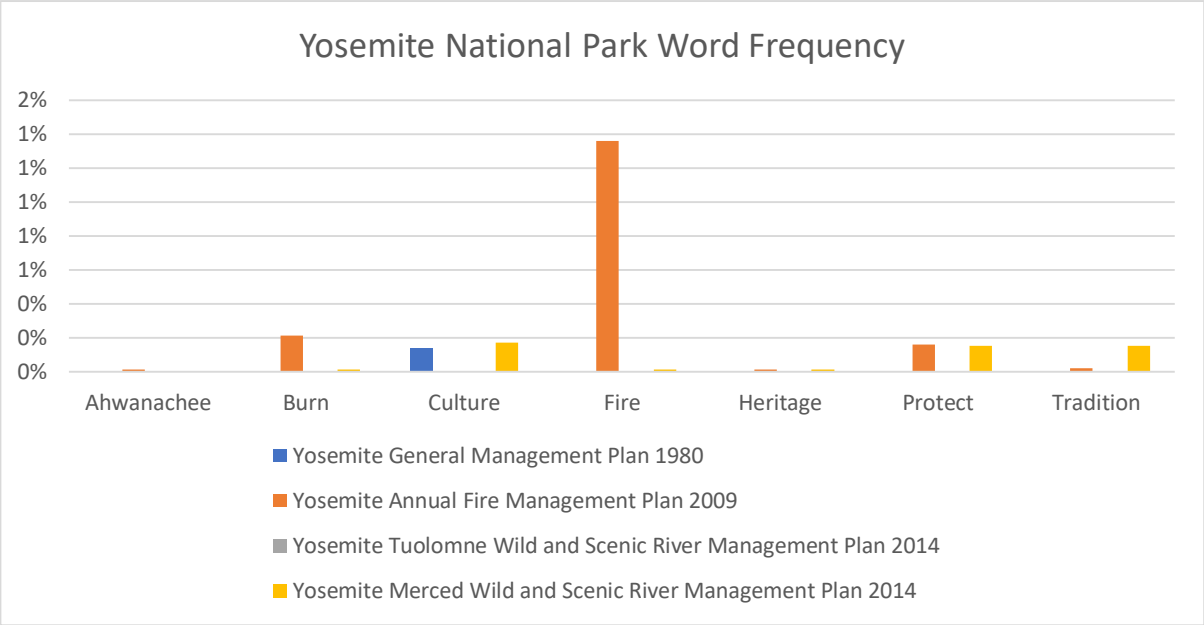

Figure 20: Yosemite National Park Word Frequency.

Figure 5 reveals a lack of reference to heritage or culture related words within Yosemite National Park Plans. The relevant Native American group, the Ahwanachee, received no mention within any of their plans and similarly, no mention of 'heritage' could be found in any plans either. Yosemite Tuolomne Wild and Scenic River Management Plan of 2014 makes no mention of any of the words selected for analysis throughout its management plans. Only one of the chosen words was found in the 1980 Yosemite General Management Plan which happened to be 'culture', possessing a frequency percentage of 0.14%. The Merced Wild and Scenic River Management Plan 2014 also had a frequency of 0.15% for both 'protect' and 'tradition'.

Language Analysis

Language analysis was undertaken using NVivo12™ to locate the information relevant to the themes chosen for analysis within the management plans from each national park. The themes identified are discussed and presented below (in no particular order) as well as appropriate quotes that reiterate and explain the meaning behind the themes.

Climate Change

The topic of climate change is an important theme in this study as it influences the development of bushfire seasons (Yu et al. 2020). As a phenomenon that already has observable effects on the environment, climate change is an important topic to include and discuss within national park management plans. Tables 1, 2, 3 and 4 present the relevant quotes and analysis that showcase the relevance of climate change in each national park.

Table 1: Kakadu National Park climate change quotes and analysis.

Management Plan	Quote	Initial Analysis
Kakadu National Park 1999 Management Plan	"If global climate changes proceed as predicted, sea level rises will occur which will cause saltwater intrusion into Kakadu on a very large scale. The Environmental Research Institute of the Supervising Scientist (ERISS) has commenced studies of the rate of coastal change due to rising sea level and other factors." (Parks Australia 1998:62)	Climate change is only briefly discussed in this management regime although it does focus on changes in the environment and the plans to prepare for any dire environmental changes.
Kakadu National Park 2007 Management Plan	"In recent years global warming and its implications for climate change has emerged as a key issue for biodiversity and environmental management on a global scale. In the Arnhem/Kakadu region, the predicted effects of climate change as a result of global warming include a rise in temperature, variation in rainfall patterns and amount, rising sea levels and changes in climate variability." (Director of National Parks 2007:53–54)	The 2007 regime provides a specific section with plans that focus on the issues and consequences that would arise should climate change continue to take effect.

Kakadu National Park 2016 Management Plan	"Climate change is likely to increase or compound the effects of existing biodiversity threats, such as fire and invasive species, and may affect many other aspects of the park such as visitor use and safety... climate change is likely to impact on cultural sites in coastal and lowland areas through rising sea levels and saltwater inundation." (Director of National Parks 2016:52)	The 2016 Kakadu Management Plan presents a more proactive approach towards the subject of climate change as they focus and incorporate the potential management implications within Kakadu in terms of biodiversity, extreme weather, fire conditions and the Bininj use of the Park.

Table 2: Uluru National Park climate change quotes and analysis.

Management Plan	Quote	Initial Analysis
Uluru National Park 2000 Management Plan	"...the need for resources to document and monitor water resources... and understanding the ecological implications of water fluctuations." (Parks Australia 2000:69)	Uluru's 2000 Management Plan makes no mention of climate change but does discuss how changes in climate can affect the environment.
Uluru National Park 2010 Management Plan	"...the implications of climate change on fire regimes are unclear. Projected increases in temperature and evaporation rates and changes in rainfall patterns may affect the fuel level and fire risk across the park..." (Director of National Parks 2010:78)	The 2010 Management Plan discusses climate change deeply with a specific section focusing on issue relating to the climate change agenda.

Table 3: Sequoia National Park climate change quotes and analysis.

Management Plan	Quote	Initial Analysis
Sequoia National Park Fire and Fuels 2011 Management Plan	"If significant new information, policy changes, or scientific knowledge (such as new information on the effects of global climate change) needs to be incorporated into the fire and fuels management program resulting in effects or consequences not evaluated in the current EA..." (National Park Services 2011:4–3)	Sequoia's Fire Management Plan does mention climate change though not as a specific topic throughout the plan. It does discuss climate change as a grievance for both environmental and heritage resources but does not thoroughly navigate through the issues.

Sequoia National Park 2012 General Management Plan	"Landscape level stressors include invasion by exotic species, altered fire regime, bioaccumulation of contaminants, isolation or fragmentation of populations, and anthropogenic climate change." (National Park Service 2012:18)	There is only a small mention of climate change in this management plan with very little discussion on methods for mitigating negative change or preventing unwanted outcomes.

Table 4: Yosemite National Park climate change quotes and analysis.

Management Plan	Quote	Initial Analysis
Yosemite National Park 2009 Fire Management Plan	"In addition, a very likely emerging issue is how global climate change will affect Yosemite's many intricate ecosystems. Currently, Yosemite is expecting longer, more intense fire seasons, as many other western parks are as well." (National Park Service 2009:70)	Yosemite's Fire Management Plan talks of climate change and its consequences-especially with regards to the extension of fire seasons and the heightening of fire intensities.
Yosemite National Park 2014 Tuolumne Wild and Scenic River Management Plan	"The role that climate change has on hindering meadow restoration should be a part of the ongoing monitoring process. This would seem… to suggest that even meadows without 'visitor impacts' should be monitored annually if for no other reason than as a control for understanding what is beneficially or adversely affecting all meadows independent of visitor use." (National Park Service 2014a)	The 2014 Tuolumne River Plan outlines the impacts of climate change within the park. It takes into account weather patterns and the impacts these would have for the environment.
Yosemite National Park 2014 Merced Wild and Scenic River Management Plan	"Since climate change threatens to disrupt annual weather patterns, it will result in a loss of habitats, food, or increased number of predators, parasites, and diseases." (National Park Service 2014b)	The 2014 Merced River Plan also incorporates weather patterns and its impacts as it analyses the affects climate change would have on the environmental habitats throughout the National Park.

Cultural Resource Management

The protection and management of the cultural aspects within national parks is an important inclusion to management plans as it ensures that the history and culture behind these national parks are also at the forefront of heritage protection. When looking at the cultural resource management of these national parks, the Australian park management plans incorporate them more than their United States counterparts. Tables 5 to 8 showcase each national park's quotes and a preliminary analysis of these park's management plans.

Table 5: Kakadu National Park cultural resource management quotes and analysis.

Management Plan	Quote	Initial Analysis
Kakadu National Park 1999 Management Plan	"Lease agreements for Aboriginal land in the park require that Parks Australia: encourages maintaining the Aboriginal tradition of relevant Aboriginals; protects areas and things of significance to relevant Aboriginals; and integrates traditional skills of Aboriginal individuals and groups in managing the park." (Parks Australia 1998:91)	All three management plans provide in-depth considerations of the management of Aboriginal cultural heritage in the park which involves the protection of Aboriginal sites of significance, rock art and other archaeological sites as well as the oral cultural heritage of the Aboriginal groups.
Kakadu National Park 2007 Management Plan	"Bininj want to be able to guide decisions about the cultural heritage management programs and priorities in the Park and to protect their cultural knowledge and materials. [They] also want to make sure that there is culturally appropriate access to cultural materials and to have somewhere that materials are safely stored and can be viewed in private..." (Director of National Parks 2007:43)	
Kakadu National Park 2016 Management Plan	"Management of the park's cultural values is guided by the An-garregen (cultural heritage) Strategy developed in 2011 through a participatory process with Bininj/Mungguy, and in consultation with the Kakadu	

	in management of the cultural values is integral to the effective protection of them…" (Director of National Parks 2016:41)	

Table 6: Uluru National Park cultural resource management quotes and analysis.

Management Plan	Quote	Initial Analysis
Uluru National Park 2000 Management Plan	"Looking after the country in accordance with Tjukurpa is the prime responsibility shared by Parks Australia and Anangu within the fabric of joint management… The richness of the range of culturally significant places is of great contemporary and archaeological importance. Management practices must aim to retain and protect cultural as well as biodiversity values." (Parks Australia 2000:61)	Uluru National Park's two management plans both include the protection and management of the park's cultural heritage, focusing on how their traditional sites, oral histories, laws and customs continue to be a part of the park's cultural landscape. As a living cultural landscape, Anangu's involvement with the cultural resource management is also discussed within the management plans.
Uluru National Park 2010 Management Plan	"Anangu maintain a detailed body of knowledge about the park and preserving this knowledge through recording Anangu oral history and traditional knowledge is vital to the success of land management in the park and the region, both now and into the future." (Director of National Parks 2010:51)	

Table 7: Sequoia National Park cultural resource management quotes and analysis.

Management Plan	Quote	Initial Analysis
Sequoia National Park 2011 Fire and Fuels Management Plan	"The primary resource management goal for fire management is contained in Mission Goal 1a. It states that "natural and cultural resources and associated values are protected, restored, maintained in good condition, and managed within their broader ecosystem and cultural context." (National Park Services 2011:1–4)	Cultural resource management in the 2011 Fire Management Plan does discuss how best to protect and manage the heritage areas throughout the park. It mentions the concept of cultural resource management with a generalised statement from their policies that incorporate the heritage

		sites into their management plan.
Sequoia National Park 2012 General Management Plan	"Management of Cultural Resources — Since the 1971 Master Plan was completed, a number of historic structures, districts, and landscapes have been identified and inventoried. The general management plan must decide what should be done to properly care for a cultural resource, and how cultural resources fit into the overall scheme of park management. While the National Park Service strives to preserve and protect cultural resources whenever possible, funding and staffing are insufficient to preserve and protect all cultural resources in the parks." (National Park Service 2012:3)	The 2012 General Management Plan also considers the best protection and management of the Park's heritage areas. The Plan takes a more considered approach to the protection of the park's cultural heritage. The application of proper care of cultural resources is discussed however, the plan also mentions the park's incapability to preserve all cultural resources due to regulations, lack of funds and the inevitable deterioration of heritage sites.

Table 8: Yosemite National Park cultural resource management quotes and analysis.

Management Plan	Quote	Initial Analysis
Yosemite National Park 1980 General Management Plan	"Identify, evaluate, and determine the significance of cultural resources, encompassing buildings, structures, sites, and objects. Provide for the preservation, restoration, or protection of these significant cultural resources." (National Park Service 1980:8)	All of Yosemite National Park's management plans contain statements that, although briefly, mention the protection of their cultural resources including evaluating and determining their significance to the park's history. The discussion of heritage protection in Yosemite's management plans is evident throughout their regimes but does not include the development of park management's decisions. These plans present a broad and vague idea of heritage protection without including the details required for the

		actual application of these protection plans.
Yosemite National Park 2009 Fire Management Plan	"Yosemite National Park contains a variety of cultural and archeological resources, structures, cultural landscapes, museum objects, and ethnographic resources. Each resource has a complex relationship with fire and Fire Management actions. To ensure implementation of action alternatives protect significant and/or sensitive resources, a consistent set of mitigation measures are applied to actions that result from the Fire Management Plan. These mitigation measures are also applied to future actions that are guided by this plan." (National Park Service 2009:68)	
Yosemite National Park 2014 Tuolumne River Management Plan	"…the NPS will conduct a program of monitoring and ongoing study during and following the implementation of the Tuolumne River Plan to ensure that the prehistoric archeological river value is protected throughout the life of the plan. Impacts on archeological resources are irreversible, and their condition can never be enhanced. Even if all human impacts could be eliminated, a downward trend in the condition of archeological resources over time would be inevitable due to the effects of natural weathering." (National Park Service 2014a:5–56)	
Yosemite National Park 2014 Merced River Management Plan	"…preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports	

	diversity, and variety of individual choice…" (National Park Service 2014b:21)

Fire Detection/Suppression

Fire detection and fire suppression are two very different methods which are applied in National Parks. While detection is an important application to the management of fire, suppression is a rare occurrence throughout park burnings as they attempt instead to proactively burn certain areas in the early dry season to prevent the need for suppression later in the year. Prescribed fire, instead, shows the important role fire has within national parks. It assists certain plants which need fire to germinate, develops a mosaic of vegetation and reduces the accumulation of hazardous fuels (Kilgore 2017). Tables 9, 10, 11 and 12 provide examples of quotes that explains the significance of fire detection and prevention within national parks.

Table 9: Kakadu National Park fire detection/suppression quotes and analysis.

Management Plan	Quote	Initial Analysis
Kakadu National Park 1999 Management Plan	"Fuel needs to be reduced strategically as part of managing habitats in all the major landform systems of the park: the floodplains, lowlands, and escarpment and plateau… In order to try to stop fires spreading off and onto floodplains later in the season, greater effort is required to systematically reduce fuel on floodplain upland margins as these dry out. A major issue in managing habitats in the lowland woodlands is that a fine-scale mosaic of patches that covers a range of fire histories should be developed." (Parks Australia 1998:67)	All of Kakadu National Park's Management Plans examine the causes and consequences of fire, looking specifically into the different types of fuels that instigate fires as well as their processes and methods to detect these fires. As fires are one of the most significant threats to Kakadu National Park the inclusion of fire suppression and detection is a topic of significant importance that needs to be acknowledged within the plan.

Kakadu National Park 2007 Management Plan	"With the arrival of pastoralism, fires tended to be lit mainly in areas favoured by grazing water buffalo such as the floodplains and adjacent lowlands…also caused changes to the intensity and frequency of fires, particularly within wetland areas and woodland margins. Due to these changes, the fine mosaic of burnt and unburnt patches that had previously protected country from damaging late season fires, and that provided optimum conditions for maintaining species abundance and diversity, was lost. As a result, extensive fires in the late dry season became more common." (Director of National Parks 2007:59)
Kakadu National Park 2016 Management Plan	"Frequent, extensive and high-intensity fires are the most significant threat to the stone country environment. While plants and animals in the stone country have evolved with some fire, many species are vulnerable to frequent and intense fires. A stone country fire management programme has been implemented in the park since 2006, and this has been successful in reducing the extent and intensity of fires. However, effective fire management over this remote, rugged and generally inaccessible region remains challenging and expensive." (Director of National Parks 2016:63)

Table 10: Uluru National Park fire detection/suppression quotes and analysis.

Management Plan	Quote	Initial Analysis
Uluru National Park 2000 Management Plan	"The loss of the habitat diversity that had been associated with the earlier mosaic patterning is believed to be one of a variety of factors contributing to the loss of over 40 per cent of mammal species from the Central Australian region… The fire management regime integrates aspects of traditional Anangu burning practices with a scientifically based approach. Prescriptive fire action plans will be included as part of the review being conducted currently of the Fire Management Strategy." (Parks Australia 2000:76)	Likewise, Uluru National Park's management plans describes the traditional methods they use to burn specific areas within the park. They also discuss the general time period in which fires are usually detected and how preventative measures such as prescribed burning to contain the bushfires are set up.
Uluru National Park 2010 Management Plan	"The park's fire history has been well mapped. Since the 1940s, the large wildfires that have had an impact on the park have all started beyond the park boundary. Large fires generally occur in early summer and particularly following periods of good rains. Prescribed burning helps to contain such wildfires and reduce their impacts." (Director of National Parks 2010:78)	

Table 11: Sequoia National Park fire detection/suppression quotes and analysis.

Management Plan	Quote	Initial Analysis
Sequoia National Park 2011 Fire and Fuels Management Plan	"Dead fuel loads in the various vegetation types in the parks vary according to fire history, elevation, growth pattern, aspect, and length of growing season. The fire cycle, fuel load, and vegetation type are closely interrelated, and each fire type serves to stabilize and perpetuate a given community. Conditions produced from fire suppression have given rise to new	The 2011 Fire and Fuels Management Plan presents a detailed explanation of fuel loads throughout the park as they are interrelated to the natural landscape. Fire detection occurs concurrently with the supervision of wildlife as some plants require fire

	fuel vegetation complexes that influence fire type, which in turn affects the complex." (National Park Services 2011:10–3)	to germinate. Their application of fire is slowly building towards using fire for prevention rather than an overall fire suppression.
Sequoia National Park 2012 General Management Plan	"...all fires in Sequoia, General Grant, and Kings Canyon National Parks were suppressed, which results in important ecosystem changes...Giant sequoia reproduction, which in the past depended on frequent fires to expose mineral soil and open gaps in the forest canopy, effectively ceased, and the reproduction of other shade-intolerant species was greatly reduced..." (National Park Service 2012:28)	Sequoia's 2012 General Management Plan looks critically into the fire seasons throughout the park and outlines the different types of fire loads that assist with fire detection. There is discussion about less application of fire suppression as it ruins the natural and cultural landscapes of the parks; this is a very important avenue to develop towards in terms of fire management.

Table 12: Yosemite National Park fire detection/suppression quotes and analysis.

Management Plan	Quote	Initial Analysis
Yosemite National Park 2009 Fire Management Plan	"Maintenance burning of prescribed fire units that have been previously treated could have a higher priority than first entry (initial) burns. Keeping previously treated areas in their restored condition would be more important than treating new areas in many cases, and in particular would avoid the repeated build-up of fuels." (National Park Service 2009:51)	The use of prescribed fire is discussed throughout the 2009 Fire Management Plan which is essential to the understanding of the use of fire throughout the park as it continues the traditional methods of fire detection and consideration
Yosemite National Park 2014 Tuolumne River Management Plan	"Fire also played a role in shaping the vegetation communities and landscape of Tuolumne Meadows, but the frequency and types of ignition (lightning or anthropogenic) of fire are largely unknown. Ongoing studies of fire history in subalpine forests may shed some light on the role that	This management plan does include a significant section on the use of fire within the parks but also acknowledges that not much is known about its detection or suppression.

	fire may have played in shaping Tuolumne Meadows and point to using fire as an additional restoration too." (National Park Service 2014a:5–47)	
Yosemite National Park 2014 Merced River Management Plan	"Reinstitution of low intensity/high frequency fire as an ecological process." (National Park Service 2014b:6)	The 2014 Tuolumne River regime also has no specific mentions on fire detection and prevention providing only a vague explanation and understanding of the significant of fire within the Park.

Indigenous Responsibilities

Indigenous responsibilities within national parks encourages teamwork and collaboration between park management and Indigenous groups. It ensures that Indigenous groups are a part of the management of the park whether as rangers or as members of the Board of Management. Indigenous consultation, which is evident in the United States national parks, can also assist with park supervision although the decision ultimately lies with the actual park management. Tables 13–16 presents the quotes and analysis that supports Indigenous responsibilities throughout the parks.

Table 13: Kakadu National Park Indigenous responsibilities quotes and analysis.

Management Plan	Quote	Initial Analysis
Kakadu National Park 1999 Management Plan	"… Aboriginal people should participate in planning and managing the whole park and not only those areas which are granted as Aboriginal land (Australian Parliament 1978). This commitment was based upon the recommendation made in the second report of the Ranger Uranium Environmental Inquiry (page 206), that the guidelines recommended by Mr Justice Woodward in the Second Report of the Aboriginal Land Rights Commission (para. 515), should be applied to the planning and management to the whole of Kakadu." (Parks Australia 1998:46)	Kakadu National Park includes the responsibilities of their traditional owners throughout their management plans especially as a national park that has a continuing relationship with Bininj/Mungguy. All three management plans contain the responsibilities of the BIninj/Mungguy and express understanding of the obligations that the Bininj/Mungguy have to the country and their traditional customs.

Kakadu National Park 2007 Management Plan	"Under Bininj cultural protocols and practices, Bininj landowners are responsible for making decisions about their country and are guided by Bininj customary decision-making structures, seniority and kinship obligations. To help ensure that Bininj are involved in formal decision-making processes related to managing and making decisions about their country in the Park, Park staff consult and make shared decisions with Bininj on a range of day-to-day management issues under guidelines developed by the Board in collaboration with the NLC." (Director of National Parks 2007:32)
Kakadu National Park 2016 Management Plan	"The Director will work with Bininj/Mungguy and in collaboration with existing businesses, the broader tourism industry and other park stakeholders to develop partnerships and other ways of increasing opportunities for Bininj/ Mungguy, related to implementation of this plan. This may involve linking Bininj/ Mungguy with, and providing support for, people who can provide relevant skills development, advice and appropriate development opportunities." (Director of National Parks 2016:39)

Table 14: Uluru National Park Indigenous responsibilities quotes and analysis.

Management Plan	Quote	Initial Analysis
Uluru National Park 2000 Management Plan	"Central to Tjukurpa is the concept that Anangu are responsible for looking after country. This responsibility entails obligations to current and future generations. These obligations are shared by Nguraritja and Parks Australia." (Parks Australia 2000:31)	The two management plans from Uluru National Park both include a discussion about the responsibilities that the Anangu have within the National Park. As the park resides on land owned by the Anangu, they contribute to the responsibilities throughout the park ensuring that their traditional customs continue to be executed. Both of these management plans look into the responsibilities that Anangu have for looking after country. The relationship between the park and the traditional owners is also expressed as they discuss the uses of the land and the responsibilities that entail simultaneously.
Uluru National Park 2010 Management Plan	"...ascertaining and expressing the wishes and opinions of Aboriginal people in the region about the management of their land and legislation about their land...consulting with traditional Aboriginal owners of, and other Aboriginal people interested in Aboriginal land in the region, about proposals for the use of that land." (Director of National Parks 2010:38)	

Table 15: Sequoia National Park Indigenous responsibilities quotes and analysis.

Management Plan	Quote	Initial Analysis
Sequoia National Park 2011 Fire and Fuels Management Plan	"Native American uses of the parks continue, with an increased understanding, protection, and accommodation of traditional uses." (National Park Service 2012:32)	Although not a lot is mentioned with in relation to Native American responsibilities, the Sequoia National Park management plans still include the continued use of the park by the Monache as well as the relationship that is slowly forming with them. The meetings held with the Native American groups inferred that a relationship with the Monache is on the cusp of forming as they slowly start to include their perspectives and insights into the management of the park.
Sequoia National Park 2012 Management Plan	"The National Park Service conducted consultation meetings in July of 1999 with a variety of Native American (American Indian) tribal groups and individuals. These meetings were held on both sides of the Sierra Nevada in areas from which Native American groups historically accessed and used lands now subsumed by Sequoia and Kings Canyon National Parks." (National Park Services 2011)	

Table 16: Yosemite National Park Indigenous responsibilities quotes and analysis.

Management Plan	Quote	Initial Analysis
Yosemite National Park 2014 Merced River Management Plan	"It also includes the traditional and cultural association of Native Americans with the Merced River and its resources, and the rich history of human influence throughout the corridor. This cultural connection runs deep and is shared by many." (National Park Service 2014b:17)	Unlike the other three national parks, Yosemite National Park only mentions a form of Indigenous responsibility in their Merced Wild and Scenic River management plan.

Relationship with Indigenous Groups

The relationship between Indigenous groups and park management in national parks is important as the land in question is the traditional country of the Indigenous groups. They have the knowledge to ensure the park's environmental and cultural sustainability. A relationship would also contribute to the acknowledgement and inclusion of Indigenous traditions and customs that could be used to care for the park traditionally and respectfully. Tables 17, 18, 19 and 20 showcase the relationship between Indigenous groups in each national park.

Table 17: Kakadu National Park–Relationship with Indigenous groups quotes and analysis.

Management Plan	Quote	Initial Analysis
Kakadu National Park 1999 Management Plan	"Joint management changes over time and there is no single model for jointly managing national parks. Joint management in Kakadu combines a legal structural framework set in place by the Act, lease agreements with the traditional owners of Aboriginal land in the park, and the continuing day to day relationship between Parks Australia staff and traditional owners. Parks Australia, the traditional owners and other Aboriginal people work continuously to refine and develop the process of joint management. The aim is to ensure that the joint management of the park is as effective as possible." (Parks Australia 1998:8)	The relationship between Aboriginal groups and park management in Kakadu National Park is evident throughout their management plans especially since joint management is a prevalent part of the national park's management regime. Their relationship can be seen to incorporate the traditional practices of the Bininj/Mungguy as they navigate caring for the park as respectfully and as traditionally as possible.
Kakadu National Park 2007 Management Plan	"Joint management is Aboriginal landowners and Parks Australia working together and deciding what should be done to manage the Park with and on behalf of traditional owners and for other interests. Joint management is about working together to enhance and protect Aboriginal rights and interests while looking after the natural and cultural values of Kakadu National Park	Aboriginal relationships with park management is exhibited in all Kakadu Management Plans as an integral part of joint management. Its development since the Park's fruition is shown through the greater roles and responsibilities given to Aboriginal people as well as their inclusion in

	and providing opportunities for visitors to experience and appreciate these values safely. (Director of National Parks 2007:31)	management decisions as part of the Park's Management Board.
Kakadu National Park 2016 Management Plan	"Joint management is a partnership between Bininj/Mungguy and government to share the land in Kakadu and share responsibility for managing the land. Through joint management the partners work to protect the park's values and share it with the public, bringing together traditional knowledge and modern science, and creating opportunities for Bininj/Mungguy to be involved in park management at all levels, establish businesses and preserve their culture for future generations." (Director of National Parks 2016:16)	

Table 18: Uluru National Park–Relationship with Indigenous groups quotes and analysis.

Management Plan	Quote	Initial Analysis
Uluru National Park 2000 Management Plan	"Joint management of Uluru - Kata Tjuta National Park demonstrates how Anangu and other Australians can work together, respect each other, and achieve mutual goals. Anangu economic and community development aspirations will be supported by joint management, as will Nguraritja expectations of benefiting from their land being used as a national park." (Parks Australia 2000:11)	Much like Kakadu National Park, Uluru is also a jointly managed park that involves their traditional owners throughout the park's management. The relationship between Anangu and park rangers is evident by their inclusion since the conception of Uluru National Park. The management plans showcase the Aboriginal groups' roles throughout the park as well as the care and respect that park management has for

		Aboriginal heritage and their traditions.
Uluru National Park 2010 Management Plan	"Successful joint management is based on a partnership of trust and commitment. At Uluru–Kata Tjuta National Park joint management involves bringing together cultural and scientific knowledge and experience, working with different governance processes, and interweaving two law systems – Tjukurpa and Piranpa law. Making this work requires Nguraritja and Piranpa to learn together, learn from each other, respect each other's culture and bring together the different approaches." (Director of National Parks 2010:37)	

Table 19: Sequoia National Park–Relationship with Indigenous groups quotes and analysis.

Management Plan	Quote	Initial Analysis
Sequoia National Park 2011 Fire and Fuels Management Plan	"The National Park Service conducted consultation meetings in July of 1999 with a variety of Native American (American Indian) tribal groups and individuals. These meetings were held on both sides of the Sierra Nevada in areas from which Native American groups historically accessed and used lands now subsumed by Sequoia and Kings Canyon National Parks…overall, those groups that shared concerns or comments regarding the parks' fire program were interested in continuing to receive information and in being consulted regarding the planning and implementation of prescribed fires, in particular." (National Park Services 2011:1)	Sequoia National Park does not have the same strong relationship that the Australia National Parks have but it does attempt to consult their Native American tribes where possible. The 2011 Fire and Fuels management plan explain the meetings that the National Park service had with the Native American groups and how this has helped understand the natural landscape better.

Sequoia National Park 2012 Management Plan	"Consult with local Native American tribes as required by law. Accommodate resource access and use of ethnographic resources to the extent allowed by law and policy; provide interpretation of Native American uses of the area; and offer local Native American crafts at park stores." (National Park Service 2012:90)	The continuation of this relationship would create a better understanding of the landscape not only through the traditional methods that the Native Americans have applied for thousands of years but also through the understanding of scientific applications to better assist the traditional methods.

Table 20: Yosemite National Park–Relationship with Indigenous groups quotes and analysis.

Management Plan	Quote	Initial Analysis
Yosemite National Park 2014 Merced River Management Plan	"It also includes the traditional and cultural association of Native Americans with the Merced River and its resources, and the rich history of human influence throughout the corridor. This cultural connection runs deep and is shared by many." (National Park Service 2014b:17)	Only one of Yosemite National Park's management plans contained information regarding its relationship with the Native Americans. The Merced Wild and Scenic River management plan briefly looks at the Native American influences throughout the rivers natural landscape and pays its respect by acknowledge the cultural connection this has to the country.

There is little change that can be seen in the frequency of terms use regarding Indigenous cultural heritage, Indigenous owner responsibilities or fire management. This is despite the fact that the same plans variously recognise the increasing importance of climate change and its impacts on the fire regime. Some interesting variations can be seen with respect to fire management strategies with some parks relying on suppression of wildfires (while recognising that this has a negative effect on native flora recruitment) while others do no suppression. These variations and the different degrees of inclusion of Indigenous people, aspirations and responsibilities will be discussed in the next chapter.

Chapter 7: Discussion

The management of national parks has always been controlled by the policies and regulations set out by its governments. As discussed in Chapter 2, the management plans developed for the parks investigated in this study stem from both government and archaeological policies that look to continue the significance of national parks. However, policy choices for these parks are determined by what the government considers 'important' rather than what is considered important by park rangers. To understand how the protection of heritage sites is determined by the management plans in national parks, it is pertinent to examine the effects of government policies and the use of language within management plans in the United States and Australia.

How these national parks also attempt to address fire and bushfires in their management plans is a significant component of management. The intense 2019 – 2020 bushfire season in Australia sparked discussion about the fire's causes and events (Schweinsberg et al. 2020; Ulpiani et al. 2020; Ward et al. 2020). The fires revealed how the local and national governments were unprepared for constitutional responsibilities, the impact of each state government's policies on land management and the persistent disregard for Indigenous fire practices (Chester 2020). Similarly, the United States has seen a wave of intense bushfires during their 2020 summer with over 7000 fire incidents within California burning 2 178 015 acres of land (Center for Disaster Philanthropy 2020). The lack of heritage focused protection also exemplifies the national park's disregard for Aboriginal customs as effective cultural burning practices has not led to any adjustment or recalibration of fire management within most states (Chester 2020). This shows the discernible discourse that occurs between Aboriginal and non-Aboriginal peoples within park management and the power struggle that Aboriginal peoples have when attempting to protect and care for their Country. As such, this thesis set out to re-assess the function of management plans, investigating how the language used indicates the level of protection within fire scenarios. The aims outlined in Chapter 1 are revisited here in light of the results presented.

The protection of heritage within national parks

The perception of heritage sites and their significance by park management is revealed through the information extracted from both word frequencies and language analyses of park management plans. While government policies and regulations clearly have jurisdiction over the development of management plans, it is still park management that form the words and the language used within these regimes. The language material gathered encompasses the implementation of heritage site protection, or lack thereof, thus exhibiting how each national park incorporates the park's Indigenous heritage and culture.

To understand how the language used is illustrative of the behaviour towards heritage protection, the language analysis and management from Chapter 5 explored the deliberate use of language and linguistic behaviour to circumvent the discussion of heritage protection. Spolsky (2004:8) in his development of language policy refers to this as language management and states:

> There are also cases of direct efforts to manipulate the language situation. When a person or a group directs such intervention, I call this language management.

This language management is exhibited throughout all chosen management plans especially with regards to heritage protection. The lack of incorporated Indigenous customs throughout the United States management plans, apart from where there is a generalised statement about them, shows the control park management (and to an extent, the government) has on these regimes. Similarly, while there is more inclusivity within Australia national parks and their management teams, the discussion about heritage protection is not as imminent when compared to the discussion on economic avenues. These will be discussed further below.

Australian National Parks

Both Kakadu National Park and Uluru-Kata Tjuta National Park documents reference the protection of Aboriginal heritage and culture throughout their management plans.

The heritage sites, valued by both Aboriginal groups and the general Australian community, are included and discussed in a number of pieces of legislation. This is exemplified in the results from Chapter 6 in which the Indigenous roles and responsibilities on the park are a significant aspect to park management to follow the requirements from legislation such as the ALR Act 1976. These responsibilities are developed to create a working relationship between the Aboriginal peoples, who own the land, and the park management who rent it which adheres to the regulations set out by such legislation. The EPBC Act 1999 and the ALR Act 1976 are quintessential to the development of management plans as the regulations that dictate the protection of significant environmental and heritage features (Director of National Parks 2010b). They promote the ecological sustainability of the park as well as the co-operation of Aboriginal and non-Aboriginal members of park management. These Acts also recognise the role of Aboriginal peoples in the conservation and protection of heritage sites throughout both parks which ensures that their knowledge and customs continue to be an important part of the development of management plans.

There are also other heritage related guidelines and regulations that management plans should adhere to. The Burra Charter, a list of principles applied for the proper practice of heritage conservation, is also used to ensure the correct protection and acknowledgement of the significance of heritage sites (Australia ICOMOS 2013). The application of these principles within national park management plans guarantees that Aboriginal heritage sites are still being properly protected with the continuity of Aboriginal culture in mind. As World Heritage Listed places, Kakadu National Park and Uluru-Kata Tjuta National Park much also apply the UNESCO World Heritage List management plan initiatives into their regimes to create ways to cultivate and protect the park's culturally and environmentally significant features. Despite these regulations that look to protect the Aboriginal heritage sites within Kakadu and Uluru-Kata Tjuta National Parks, there are no specific plans for the protection of heritage sites in fire related incidents with only general preventative measures being applied for both wildfires and traditional burning for the protection and conservation of heritage sites (Director of National Parks 2010b, 2016).

United States National Parks

Sequoia National Park and Yosemite National Park both seem to predominantly neglect the protection for heritage sites within their management plans as they ultimately focus more on the ecological aspects of national parks. The infrequent reference to heritage in their management plans infers their lack of protection procedures surrounding heritage sites, especially with regards to burning or bushfire protection. The recent changes in forest structure throughout the Sierra Nevada have likely been affected by fire in a multitude of ways (McKelvey et al. 1996:1036). This has been a constant part of the area's existence as fires were used and started by Indigenous groups as well as induced naturally (Kay 2000). The lack of Indigenous inclusion within their management plans, especially in relation to fire management, has resulted in an insufficient protection program that focuses on fire suppression rather than its management. Although there are environmental benefits to burning low-moderate intensity wildfires, choosing the more economical approach of fire suppression was applied (McKelvey et al. 1996:1038). However, as discussed in Chapter 6, there is very little protection management that occurs when protecting their heritage sites. Instead, there is a focus on the preservation and protection of the park's ecology and wildlife.

The role of management plans in protecting heritage sites

Management plans are the regimes used to implement the regulations issued by a number of stakeholders including the tourism sector, the conservation sector, the environmental sector and councils (Parks Australia 2000). As previously mentioned, government legislation is also used to navigate around the required management details in national parks especially when protecting and preserving the culture and ecology of each park. Management plans set a long-term vision for each park and outline the objectives and strategies developed to enhance that vision.

Chapter 6 examined the frequency of heritage-related words in management plans. The consistent use of these words, or lack of, exhibits how the management plans shift focus from traditional Aboriginal customs to areas that garner more 'tourist'

attention. The control and power over these management plans rests on what park management consider significant to the national park. Since park management in both Kakadu and Uluru-Kata Tjuta National Park consists of a mix of both Aboriginal and non-Aboriginal peoples with a majority of the group consisting of Aboriginal peoples (Haynes 2017), the significance of these parks should likely have a focus on the application of Aboriginal traditions into the protection of both cultural and natural resources. Kakadu National Park management plans frequently mention the importance of Aboriginal tradition and culture focusing a significant part of their regime into protecting both tangible and tangible heritage. Similarly, Uluru-Kata Tjuta National Park incorporates Aboriginal customs within their management plan, such as cultural burning, to ensure that heritage is the focal point of their regimes. As shown in Chapters 3 and 6, Indigenous heritage and history are an integral part of Australian national park management plans. While there is no generic model for a successful relationship or joint management in national parks, negotiation and constant communication between both parties is important to ensure the continuity of the national parks' proper heritage protection.

Australian park management plans also more generally take into account external factors when preparing for the protection of wildlife and heritage sites; namely climate change. Chapter 6 explored the topic of climate change in Kakadu and Uluru-Kata Tjuta National Parks, with specific sections of their respective management plans revealed to focus solely on the repercussions of climate change and how to navigate its influences. These management plans also look towards the future, developing procedures that would ensure the prosperity of wildlife and maintaining the heritage sites within the parks.

However, based on the results presented in Chapter 6, there is no obvious change in frequency of heritage-related words throughout both Kakadu and Uluru-Kata Tjuta National Parks. Throughout the three management plans used for Kakadu National Park, the chosen words fluctuate in frequency with no concrete change or development to cultivate the significance of Aboriginal heritage sites. A huge drop in frequency from the 1999 Management Plan to the 2007 Management Plan for the word 'tradition' may reflect on the park management relationships and practices during this period. As traditions and heritage are a huge part of Aboriginal culture, the lack of

word frequency between management plans may imply that the traditional owners, were not as involved in management meetings at this time. Tradition is such a complex concept that draws on the past and is related to the Aboriginal groups' identity (McDowell 2008). The decline in 'tradition' frequency may imply that Aboriginal culture and identity was not at the forefront of consideration for these plans. A similar pattern can also be seen in Uluru National Park's management plans. There is very little difference in word frequencies between the 2000 Management Plan and the 2010 Management Plan which indicates little change in how their park regimes managed the protection of their heritage sites over time.

The inclusion of Aboriginal peoples in the development of management plans as well as the implementation of management plans also ensures that the discussion of protection, whether for heritage or wildlife, includes traditional customs such as cultural burning. This can be related back to the concept of 'heritage discourse' which was discussed in Chapter 2. Heritage discourse within national parks and their management plans falls under the misrepresentation of heritage, Aboriginal heritage specifically, which reveals the power relations that undermine the struggle between power and knowledge (Waterton et al. 2006). While it is apparent that the inclusion of Aboriginal heritage and customs is important when developing management plans, there has always been a sense of difficulty when attempting to decolonise any government related cases. This makes it more difficult to employ the concept of joint management fairly especially when Aboriginal groups are constantly faced with pressures to control their lands despite perhaps having no secure land tenure or adequate resources. These pressures have led to some Aboriginal groups accepting co-management agreement as a way to gather resources to care for Country (Todd 1995). This has also led to some Aboriginal groups having to lease back their lands to the government for joint management thus preventing Aboriginal groups from having full control of their Country (Todd 1995).

As previously mentioned, Traditional Owners do hold a majority of the seats within the Australian Park Board of Management which exhibits the responsibilities Aboriginal groups hold within these national parks. This exhibits the extent of which park management are attempting to incorporate Aboriginal groups to the development of heritage protection details within their management regimes. Aboriginal peoples are

found throughout every level of park management in the Australian case studies. As shown in Chapter 6, they participate in the planning and management of the whole park, not just specific areas granted as Aboriginal land (Parks Australia 1998). However, while their participation in park management is discussed in these Australian management plans, the reality presents itself quite differently. Colonisation, despite being unsolicited still permeates the decisions being made throughout Australian national parks. From the genesis of fire management, which involved the discouragement of traditional burning practices (Ritchie 2009), to modern fire management which involves non-traditional initiatives. How Australian management plans protect their Indigenous heritage sites is likely a matter of Indigenous inclusivity within park management.

Sequoia National Park and Yosemite National Park management plans focus mainly on the protection of their parks' ecology with very little mention on the protection of their heritage sites or relationship with Native Americans. Their management plans, while they endeavour to include all aspects of their respective national parks, only include limited reference to relationships with Native Americans. Indigenous heritage sites throughout the park are rarely mentioned in their management plans, apart from where consulting with Native American is concerned and does not specify the agency to which heritage sites, or other sites, within their national parks will be protected (Wolfley 2016:66). The colonisation of these national parks during the later 1800s continues to permeate park management especially with regards to the inclusion of Native Americans and the protection of their heritage and traditions. The complete removal of Native Americans from some of their lands for national expansion, despite attempts to create policies for the protection of Native Americans during the 1830s, was commenced during the 1850s when large regions of Native land were being sold off (Keller and Turek 1998:18). Native Americans populations were slowly dwindling as their cultures were ridiculed and simultaneously romanticised and yet, their lands were being exploited to create these national parks (Keller and Turek 1998). These behaviours towards Native Americans continued well into the early 20th century when government agencies decided to attempt to repair and re-establish relationships with Native Americans (Wolfley 2016). Despite government and park management attempts to include Native Americans in the development of management plans, there are still effects from the history of colonisation and violence that limits Native American

inclusion. The power that the park management, and as an extension the United States government, has over the choices that Native Americans have within their own lands exemplifies the deeply rooted colonisation within national park history.

While both national parks consult with the respective Native American groups, these consultation meetings are simply procedural with no actual responsibility or decision-making being afforded to the Native American groups (Wolfley 2016:67). The NPS still has full power over the interests and decisions being made for their national parks without so much as including the Native American voice in the final product. Chapter 6 exhibits this with mentions of Native American traditions and heritage being of a lower frequency compared to other aspects within the parks. However, when discussing cultural resource management, especially in Yosemite National Park's Fire Management Plans, the regimes do take into account the complex relationship that fire protection and cultural management has when attempting to implement actions that adhere to park management regulations but also protect heritage sites when needed (National Park Service 2009). However, Chapter 6 also shows that Sequoia National Park management plan presents only a generalised state that suggests 'proper' care for their cultural resources. This, along with their lack of funding for heritage protection, exhibits their lack of full commitment or application when protecting their Indigenous heritage sites.

Yosemite and Sequoia national Park, while both attempting to include the protection and conservation of heritage and history in their management plans, still have yet to fully include Native Americans into park management discussions and discourse. The most recent policy involving Native Americans is the 2011 Consultation Policy with Indian Tribes which still prevents a concrete inclusion of Native Americans to the management of national parks (Wolfley 2016). While there is no tangible reason as to why a form of joint management in United States national parks has not been considered, there are considerable conditions required when consulting to ensure that Native American groups are heard and listened to. These conditions include guaranteeing early consultation for any projects or activities that may affect heritage sites, including native leaders and elders into the decision-making process prior to any federal registers, and face-to-face discussion with Native groups to provide an effective consultation (Wolfley 2016). However, there is still the chance that without

having Native Americans in park management conversations, the protection of heritage sites will take a backseat compared to other features of their parks.

Indigenous roles within management plans

The concept of joint management has been applied in both Kakadu and Uluru-Kata Tjuta National Parks since their conception. As a response to an increase in legal recognition of Aboriginal rights to their lands, the ALR Act was developed in 1976 (Smyth 2001). Both national parks discuss the arrangements of joint management as a significant aspect of their management plans. As joint management refers to the 'trade-off' between the privileges and interests of traditional owners as well as the interests of government agencies and the general Australian community, it includes the transfer of ownership of the national park to Aboriginal people as a trade for the continuity of the area's 'national park' status as well as shared responsibility of park management (Smyth 2001:76). This occurred when the ALR Act 1976 was set in motion, creating an opportunity for Aboriginal peoples to own their land once again (Haynes 2017)

Within Kakadu National Park, joint management involves Aboriginal people and park management working together to ensure the Park's cultural and natural protection. Aboriginal people take part in park management as rangers through to Board members who oversee the development of the Park and its regulations. Uluru-Kata Tjuta National Park also has similar roles for the Aboriginal groups that reside in and around the Park. Members of the National Park Board also include Aboriginal people with others working alongside rangers to ensure the continuous protection of heritage and ecological sites. Both national parks understand the benefit and significance of including Aboriginal groups in the management and protection of the national parks especially as these parks carry historical and cultural significance to Aboriginal groups and non-Aboriginal groups alike.

However, as discussed in Chapter 2, the approaches to park management can be blurred by their Eurocentric colonialist perceptions which may still lead to the exclusion of the rights and perspective of Indigenous Australians. As parks are built on policies

that are exclusionary and have had a hegemonic approach to management, there is greater emphasis on the natural and tourism resources of the parks rather than addressing the fundamental cultural issues throughout (Wearing and Huyskens 2001). Joint management has been known to combine “European conservation interests with the enduring concerns of the Aboriginal owners and occupiers” (Craig 1993:137). As such, they have been coined “Western cultural models of management with an inherent Anglo-Australian cultural bias” with Aboriginal participation leading to a “reliance and acceptance from the dominating culture” (Wearing and Huyskens 2001:182–183). The national park’s use of joint management has therefore still potentially allowed for the continuity of Eurocentric practices which diminishes the contribution of the Aboriginal peoples. Thus, despite allowing Aboriginal people control over their land, there is still the notion of ‘real-estate’ in that while the government is in fact still using Aboriginal land, the Aboriginal groups have no full control over what happens within the park (Wearing and Huyskens 2001).

While it seems that throughout all Australian national park management plans, the role of Aboriginal groups within park management is evident due to their heritage and culture intertwining with the protection and responsibilities of the parks, there is still a certain dichotomy between Aboriginal and non-Aboriginal peoples within park management. Joint management still does not wholly balance the right to use resources with the obligation to protect biodiversity and other natural and cultural resources. This can be seen in Chapter 6 where the frequencies of words such as ‘tradition’ in the Kakadu Management Plans lessen considerably within the span of 20 years. Despite the application of joint management into the management of Kakadu and Uluru-Kata Tjuta National Parks, there is still a distinction between Aboriginal and non-Aboriginal park members. Aboriginal heritage, an important part of Aboriginal culture, becomes a political part of management plans and changes the narratives around the presence of Aboriginal peoples in national parks. This suggests the lack of Aboriginal inclusion within government bodies therefore leading to possible indifference to Aboriginal culture and traditions from visitors. Although the increasing number of visitors provide economic benefit to the park’s management as well as some Aboriginal groups, there is possible evidence of the social impact on the local communities through the community’s loss of privacy, damage to heritage sites as well as hunting and gathering restrictions (Smyth 2001:85).

Sequoia National Park and Yosemite National Park on the other hand do not have Indigenous roles within their management team or national park employees. As mentioned previously, park management, instead, they consult with Native Americans for suggestions on the protection of wildlife and heritage of national parks. The relationship between Native Americans and government bodies has been marked with difficulty as the government changes. This has led to constant changes in Native American related policies during the early 1900s which resulted in the removal of Indigenous groups from eastern and southern states to smaller isolated islands thus reducing their land holdings (Wolfley 2016:57). Subsequently, the 1960s saw the creation of the federal Native American policy, the Self-Determination Era, that focused on strengthening the relationship with Native Americans, transfer control of Native American groups to tribal governments and protect Indigenous lands (Keller and Turek 1998).

While there are policies created by the Department of the Interior that enables consultation with Native Americans, they have also developed policies which include Native Americans within national park management policies. The National Park Services' (NPS) relationship with Native Americans is states in their policy:

> …the Service will pursue an open, collaborative relationship with American Indian tribes to help tribes maintain their cultural and spiritual practices and enhances the [NPS]'s understanding of the history and significance of sites and resources in the parks.
>
> (Wolfley 2016:66)

The NPS therefore recognises the significance of the national parks as ancestral lands to the Native Americans and acknowledges the importance of maintaining the traditional connection the Native Americans have with the land, their heritage sites and cultural resources.

Incorporating Indigenous customs into management plans

The desire for most Aboriginal peoples to maintain connection with Country and apply traditional burning methods throughout the national parks is profound (Fache and Moizo 2015). Aboriginal peoples have lived in Australia for approximately 65 000 years and over this immense time span have developed a rich culture of ceremony, oral history, rituals and ecological knowledge (Clarkson et al. 2017). As such, Aboriginal peoples have prioritised the revitalisation and continuity of their knowledge and practices to ensure that the information is made available to future generations. There has also been an increase in recognition by non-Aboriginal peoples of the benefits of applying Aboriginal customs, traditional knowledge and practice to contemporary land management (Burbidge et al. 1988). As presented in Chapter 6, both Uluru-Kata Tjuta and Kakadu National Park have focused on including Aboriginal peoples and their customs into their management plans. This inclusion offers a platform for Aboriginal peoples to continue their customs while also being able to share them with non-Aboriginal people. The main Aboriginal custom that has been included in management plans has been traditional fire management or cultural burning.

The effective use of burning for both cultural and natural resource management requires a knowledgeable use of fire based on experiential knowledge applied through generations of understanding and living with the landscape (McGregor et al. 2010). An essential element for the success of these management plans includes Aboriginal people being able to exercise control over burning as well as having their knowledge and practice brought out in Park management. Controlling their knowledge and having the opportunity to put it into practice is an important part of Aboriginal customs including passing down this information to the next generation (McGregor et al. 2010:727). The majority of Aboriginal groups within these national parks have the capability and the knowledge to conduct traditional burning but often lack the opportunity to put this into practice (McGregor et al. 2010:727). To work alongside Aboriginal groups for the development and expansion of the national park's fire management means understanding the country and its needs in the traditional sense thus assisting in the management of fire and the details required for the protection of Aboriginal heritage sites throughout the parks.

The application of cultural burning is still being discussed throughout Australia today. While both Uluru-Kata Tjuta and Kakadu National Park have implemented cultural burning in their management plans, the intensity of the 2019–2020 bushfires in Australia has surged the interest in cultural burning, calling for Aboriginal collaboration with local communities to create a broader burning program (Romensky et al. 2020). Several Aboriginal groups have started creating organisations that run programs across Australia aimed at reintroducing cultural fire management into their lands (Ingall 2018).

Unlike Australia national parks, neither Yosemite nor Sequoia National Park have incorporated Indigenous customs into their management plans. As demonstrated in Chapter 6, their relationship with Native Americans is limited to cultural association, allowing Native Americans to use the parks and Native American consultations. During the early 1900s, there were times when Native Americans were removed from the national parks as they were seen as "repulsive and jarring to affluent tourists" (Keller and Turek 1998:233). Writers during the early 20th century attempted to justify the removal and Native American from their lands through the idea that pure wilderness was meant to be uninhabited (Kantor 2007:47). However, most of the argument was debating that most of the park areas had never been used by the Native Americans which intended that no removal technically occurred (Kantor 2007:47). This, along with the forced assimilation of Native Americans into colonial society, led to a relationship that started with the theft of Native American land by the government followed by the taking of land and a nation-wide disrespect of tribal cultures and traditions (Keller and Turek 1998:233). Wars against Native American groups were consistent during the late 1850s as Anglo-Americans tried to take over more traditional lands (Dilsaver 1994:74–75). It was not until 1987, when the government wanted to repair their relationship with the Native Americans, that the NPS created its Native American Relationships Management Policy that committed to respecting and actively promoting Native American culture and heritage as a part of the parks themselves (Keller and Turek 1998:234).

However, despite the circumstances, Native American customs have slowly started to take part in the protection process of the Sierra Nevada. Fire has always taken over the Sierra Nevada but prior to the intense wildfires of recent years, Native American

groups have annually burnt and cleared out certain areas of the mountain range to encourage new plant growth which assisted with fire control (Sommer 2020). The 2020 wildfires throughout California has therefore led to the national government looking towards Native American fire management techniques. New partnerships and relationships between government officials and Native Americans to use cultural burning to protect the Sierra Nevada could therefore lead towards the inclusion of Indigenous customs in national park management plans.

Summary

The difference in management approaches between Australian and United States national parks has been highlighted in this study, especially when analysing their protection of Indigenous culture and heritage. While both Uluru-Kata Tjuta and Kakadu National Parks incorporate a protection initiative for heritage sites in their management plans with regards to bushfires and burning, Sequoia and Yosemite National Park have yet to fully develop a protection program that focuses on Native American heritage and traditions. The Australian national parks create an avenue for Aboriginal groups and park management to discuss the park's heritage and ecological stature. While government policies are a huge part of the development of management plans, having Aboriginal people as a part of park management advocates for the national park's heritage.

However, the Native American relationships that the United States National Parks' have requires more involvement on the government's part. Cultural burning is slowly being discussed and applied throughout parts of the United States although has not been incorporated into national park management plans. Due to the higher risk of climate change and intensity of fires, American has started to look towards using fire and burning to prevent a greater risk in the later seasons thus lessening the need for fire suppression. They have also attempted to incorporate Native Americans and their heritage throughout management plans. While they have endeavoured to incorporate them into their consultancy, the NPS still needs to reassess their policies to create a larger platform for Native Americans; including them in the development of management plans as well as the implementation of regulations throughout their national parks.

Chapter 8: Conclusions

This thesis has explored the nature of national parks and their management plans focusing on the protection of heritage sites (particularly from bushfires) as well as interrogating at the nature of Indigenous relationships with their respective national parks. This work has provided an opportunity to see how the protection of heritage sites in national parks is applied and compare the management plans of two countries. This project also aimed to understand the use of burning throughout national parks as a way to navigate around the severity of bushfires during hotter seasons as well as the application of cultural burning by Indigenous groups as a part of fire management.

Language analysis of the management plans demonstrated that the conceptualisation and therefore protection of heritage sites differs greatly between Australian and United States National Parks. There is a better understanding on the importance of heritage sites found within the management plans from Australia that showcases the cultural and historical significance of these places. Kakadu National Park and Uluru-Kata Tjuta National Park's relationship with their respective Aboriginal groups also guides the development of management plans as a part of the parks' joint management. It creates an environment that includes the perspectives and decisions of Aboriginal people thus ensuring the continuity of traditional customs and the protection of Aboriginal heritage sites. The Australian management plans take into account Aboriginal heritage and implement Aboriginal customs to ensure that the parks' heritage is incorporated into every aspect of management.

In this thesis I argue that this has occurred because of the dichotomy between the Native Americans and the Anglo-park management. While there are also distinct differences between Aboriginal and non-Aboriginal peoples in Australia (see: Flannery 1994; Smith and Waterton 2009; Haynes 2017), the relationship between Native Americans and non-Native Americans is still yet to be more fully developed. Although the original renunciation of Native Americans within parklands have now been acknowledged, their presence is still yet to be fore-grounded. The creation of National Parks was ultimately for the preservation of picturesque environments (Spence 1996).

As such, modern park management still have yet to give attention to the permanent inclusion of Native Americans in the decision-making roles within their national parks.

The management plans from Yosemite and Sequoia National Parks have very little content in terms of heritage inclusivity except where it is required by legislation. Their plans present vague outlines of heritage protection and do not include Native Americans except when consulted on. Additionally, park management still do not need to heed the suggestions of Native Americans despite them being consulted since the parks do not legally belong to the Native Americans. However, they are in the midst of reconfiguring and developing legislation that slowly incorporates more Native Americans into the development of national park management plans which will assist in the protection of heritage sites as well as create a better regime for fire management that will hopefully incorporate more cultural burning into its prevention (Wolfley 2016).

These limitations can be perceived as the United States National Parks undeveloped attention towards Native American heritage and culture. The establishment of national parks in United States history was mostly for the protection of their natural environments (Dilsaver 1994). They had no regard for the Native Americans living within these areas and were also indifferent to the heritage sites within these parks (Keller and Turek 1998). As such, despite their attempts to create legislation that include Native Americans in park management, there may still be the lingering attitudes of colonisation that is embedded within both park management and government laws

Studying the management plans of these national parks from both a qualitative and quantitative perspective provides a holistic understanding of their nature. How they take into account bushfires when protecting heritage sites and their application of cultural burning represents the value they afford to the Indigenous heritage of the park and the customs and traditions that belong to the Indigenous custodians of the parks. The management of fire as well as the application of cultural burning within both Kakadu and Uluru-Kata Tjuta National Parks connects directly with the protection of heritage sites and also applies to the continuity of Aboriginal heritage within park management. However, the management plans from Sequoia and Yosemite National Parks do not include the protection of heritage sites as acutely. Their management of

fire focuses more on suppression rather than as a tool for preventing greater intensity fires. They also do not have the same established relationship with Native Americans thus preventing a cultural approach to most aspects of park management.

Main outcomes

Do heritage sites in national parks get the attention and consideration it deserves? This thesis has demonstrated that Kakadu and Uluru Kata-Tjuta National Parks have discussed the protection of heritage sites throughout their management plans even going so far as to include Aboriginal groups into the discussion of its protection. When it comes to protecting heritage sites from bushfires, a comprehensive fire management plan that includes the application of cultural burning to lessen the intensity of seasonal fires is applied to ensure the protection of both heritage sites and natural resources. In contrast, Sequoia and Yosemite National Park are only at the beginning of their relationships with Native Americans and so do not have the inclusive cooperation that the Australian national parks have. Their heritage sites also require a more in-depth protection program that incorporates Native American traditions and customs. Fire management, which focuses more on fire suppression, also would benefit in the addition of cultural burning to lessen the intensity of fires as well as the amount of fires during warmer seasons. This thesis has:

- Recognised the advantages that Kakadu and Uluru Kata-Tjuta National Parks have as jointly managed national parks, ensuring the Aboriginal groups continue to have a decision on what happens on their country;
- Examined the extent of heritage protection in each national park's management plans and exhibited the benefits of the approaches of Kakadu and Uluru Kata-Tjuta National Parks when discussing heritage protection compared to Sequoia and Yosemite National Parks; and
- Documented how management plans have developed over a period of time and whether their application of heritage or traditions have increased in frequency.

Future Research

The protection of heritage in national parks is an area deserving of more research. The discussion around heritage discourse in national park management and the inclusion of Indigenous groups into national park should be further researched.

Although this research has also examined at the relationship between Indigenous groups and park management using management plans, interviews with Aboriginal peoples and park managers have not taken place. This approach is recommended for future studies to provide additional perspectives and lived experiences.

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