



Article Bonan Youang and Terrinalum: The Ethnogeology of Ballaarat's Living Landscape

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Abstract: Ethnogeology offers a longitudinal history of the formation of landscapes though the lens of First Nations Peoples. Significantly, it offers an insight into landscape change and geographical formation as consequence of geological events, climate shift (change), and consequential human resilience and adaptation strategies. This article considers a cultural landscape near Ballaarat (Ballarat) in Australia and its geological omnipresence in the eyes of the First Nations' Wadawurrung People. The features, two extinct volcanoes—Bonan Youang (Mt Buninyong) and Terrinalum (Mt Elephant)—and a connection tract, offer high cultural values to the Wadawurrung People in addition to serving as key contemporary mental and orientation landmarks arising from their roles in the locality's pastoral, goldmining, and suburbanisation colonisation phases.

Keywords: ethnogeology; Bonan Youang; Mount Buninyong; Terinallum; Mount Elephant; Ballaarat; Ballaarat; Wadawurrung

1. Introduction

Increasingly, in Australia, with respect being given to its First Nations Peoples, there has been recognition and weight given by Western disciplines and government authorities that First Nations have a living cultural heritage. The confronting aspects are time and 'evidence', especially in a colonised landscape that has traditionally written its human history starting 200 years ago. In contrast, there is a quiet emergence of ethnographic historiographies that host oral tradition and story and lore as evidentiary substitutes for the written text that such disciplines treat as evidence, fact, and 'truth'.

The ethnographic voice of First Nations Peoples, additionally in Victoria, is now being given weight to my state government and local government agencies. This change in acceptance has been promulgated by policy change at the statement government level that has required local government alignment and adherence but also has increased national consideration of apologies towards the last 200 years of colonisation and errant social control initiatives that were imposed upon Australia's First Nations Peoples without their consent and voice. Thus, recognition and respect of their sovereignty of Australia's lands and waters, respectively, per country, was procedurally and legally denied. For the Wadawurrung People, who cared for their country for over 40,000 years, despite their initial welcome to share with these white and fleecing invaders with their guns and diseases, the Wadawurrung as a People were virtually wiped out within some 20 years of colonisation activities and, together with their country, became transformed by new human actions disrupting a long-sustaining ecological balance. Their landscape, or 'country', included all of the Djilang/Geelong and Ballaraat/Ballarat regions in Victoria including a large tract of Nerm/Port Phillip Bay and Warre/Bass Strait together with the animals, stars, vegetation systems, and night sky, all of which bear witness to the longitudinal geological transformation that influenced the landscapes' characteristics.

Narrating an argument to a state government-appointed independent review committee for a major liquid nitrogen gas terminal project and its environment effects statement



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Copyright: © 2023 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). that proposes a development home in a landscape that comprises a submerged landscape some 800–1000 years old, that such accordingly warrants a quality archaeological investigation given that the local First Nation's Wadawurrung People's occupancy may date back some 40,000 years, is a challenging argument and one that confounded a legal audience [1]; it is a narration based upon Western geological fact substantiated with First Nation's oral traditional evidence. Yet this is a new arena of ethnographic investigations in Australia, and ethnogeological inquiries offer a major subdiscipline platform.

Ethnogeology is in its infancy in North America and Australia. Conceptually, ethnogeology comprises the study of how geological features and topographies are interpreted, including their living cultural heritage relationships, by First Nations Peoples from a "place-based" or holistic perspective. The latter includes specific reference, regard, and weight being placed upon traditional knowledge systems, including traditional ecological knowledge (TEK), expressed through stories and ideas about their landscapes or countries that were passed down through traditions, oral narratives, and dreaming stories, often through oral, graphic/design, and dance expressions as the wisdom of Elders.

In North America, 'ethnogeology' was first coined and advanced by John Murray of the University of Manitoba in Canada in the mid-1990s in his curriculum studies. The latter drew upon discussions and hearings with the Northern Cree as to their geological worldviews in Manitoba [2,3]. Murray's writings coincided with similar discussions and investigations by geologists and geoscience educators at the Navajo Community College in New Mexico, in particular led by Steven Semken, that rotated around the connections amongst Native American traditional knowledge, their unique worldview of their landscape, and their geoscience concepts, thus called "Indigenous ethnogeological wisdom" [4–6].

In Australia, the use of 'ethnogeology' has few adherents, perhaps due to the historical pedological evolution of landscape studies and the archaeological discipline in Australia. Occasionally, one sees the all-encompassing use of 'ethnoscience' or 'biocultural' in lieu [7].

Australian anthropologist Norman Tindale recognised the merit of ethnogeology when he wrote in 1946 that "Aboriginal myths may occasionally refer to some half-remembered cataclysm of nature, or an eclipse, or meteoric shower" [8]. The ethnogeology philosophy, from an academic and practitioner perspective, lies in the 'Man and Landscape' explorations in the 1970s as part of a broader self-reflection that was occurring in Australia that questioned landscape, human positive/negative interactions, ignited a holistic environmentalism movement, and promulgated an ecologically inspired landscape architecture discipline, analogous conferences, a major change in national government environmental policies and agendas, and the establishment of government entities including the Australian Heritage Commission (AHC). Arguments by Australian landscape academic George Seddon advanced a notion of 'Man and landscape in Australia: towards an ecological vision' [9,10] that drew in archaeological academics including John Mulvaney [11], who sought to "[build] bridges between the disciplines of history and archaeology" [12], Isabel McBryde, with her holistic approach to studying the archaeology of Aboriginal Australia [13,14], and set the tone for Rose's treatise 'Nourishing Terrains', commissioned by the AHC [15], all which challenged mainstream British-(Empire)-influenced histories and historiographies about human settlement and occupancy of the Australian landscape and its waters including elevating First Nation's ethnoecological wisdom [12]. This was Australia's 1970s cultural awakening to its reconciliation and environmental accountabilities that charted major changes in values and government policies. Recognition of its First Nations crescendoed in the successful 1967 Referendum that sought to change the Australian Constitution in relation to Aboriginal and Torres Strait Islander Peoples.

Unfortunately, in the Australian state of Victoria, this enlightened approach to ethnographic historiography did little to change the legacy of "geological determinism as the chief interpretive vision" that was the passion of 19th century amateur archaeological and anthropological investigations in Victoria. Such was due the elevation of Baldwin Spencer's philosophy that Aboriginals were "creatures, often crude and quaint, that have elsewhere passed away and given place to higher forms" [16]. Spencer's ideas drew in prominent proponents and passionate stone and body-part antiquarians, such as Alfred Kenyon, Reynell E Johns, Stan R Mitchell, and Robert H Croll, who politically dominated this arena, participated in "sheer vandalism" [17,18], and influenced the theoretical logic of the 'Archaeological and Aboriginal Relics Preservation Act 1972' (Vic) [19] and thus its predilection to "relics" in deference to understanding the First Nations' cultural relationships to landscapes [20–22]. Still today, the 'Aboriginal Heritage Act 2006' (Vic), that was drafted with the agenda that "human remains are simply to be understood as data" and not ethnoecologically contextualised [21,23], and thus precepts behind Cultural Heritage Management Plans echo what Mulvaney calls "geological determinism" [16]. This was a 'materialist [stone culture] school' that believed that "Aboriginal culture was ... static, so overwhelmed by inertia that it would become extinct" [22]. In contrast, ethnographic proponents in Victoria such as Aldo Massola and Lou Lane struggled to have their investigations validated within this dominant archaeological and anthropological pseudo-academic regime in advance of the post-1970s adoption of processual archaeology theory in Australian archaeological practice and academia [21].

Recent Australia-level ethnogeological academic essays have focused upon changes in Australia's continental shelf and thus the period of sea-level rise 1000–10,000 years ago [24–26] and relationships with volcanic landscapes [27]. While both place-specific investigations offer considerable oral evidence as to dates, landscape transformations, First Nations Peoples' resilience responses, and adaptations, they also offer validation that the accumulated and innate First Nation's 'histories' are precursory lessons to our current scientific debates and risks associated with climate change. Of the former, sea-level rises and the flooding of Nerm and Coriayo/Corio Bay resonate in Wadawurrung minds and stories, whereas stories about geological and volcanic events are less prominent and less in the public domain. The latter is the focus of this article, to demonstrate and offer a platform that validates the veracity of the ethnogeology of the Wadawurrung country in the eyes, relationships, and values of the Wadawurrung People.

2. The Ballarat Landscape

Ballarat, or Ballaarat in Wadawurrung tongue, is now a large regional city in Victoria to the immediate west of Melbourne. Nestled in the northwestern section of the Western District volcanic plains, the Wadawurrung historically viewed this locality as an important juncture of multiple food and artefact resource locations, whereas in 1851, it became the preeminent centre for gold mining discoveries in Victoria. The first European squatters and pastoralists traversed its lands in 1837, having travelled up from Djilang/Geelong using Bonan Youang/Mount Buninyong and Wareenheep/Mount Warrenheip as directional landmarks. For example, both mounts quietly feature in the backdrop of colonial artist Eugene von Guérard's 'Aborigines met on the road to the diggings' [1854] that records a gold seekers trade exchange with the Wadawurrung People [28].

Terrinalum is depicted in Figure 1, and Bonan Youang is depicted in Figure 2.

Terrinalum/Mount Elephant, some 82 km from Ballarat, is a 380 m high conical breached scoria cone formed by a dormant volcano. Overshadowing the small town of Derrinallum, it is a prominent visual landscape across the overall Western District landscape. During the early European colonisation of this landscape, the mountain was known as the "lighthouse of the Western District" or the "Swagmans Lighthouse" because of this landmark characteristic [29–32].

Such visual prominence echoes the Terrinalum's omnipresence in multiple First Nation's cultures for the overall Western District, and thus, in ethnogeologies, it is both a specific as well as a generic feature. In the 1830s, Terrinalum was linguistically mapped as being part of the Teerinyillum Gundidj clan territory within the Djargurd Wurrung country. Additionally, while Terrinalum resides within the northwestern-most corner of the Djargurd Wurrung country, it sits at the intersection of the notional boundaries of the Wadawurrung, Gulidjan, and Girai wurrung countries [33]. Boundaries of First Nation's countries were 'notional' as while they lacked the tangible fence or stone markers of colonial territorial boundaries, they were equally pliable according to available food and water resources in times of drought, fire, and famine, and thus, mutual resource sharing was culturally more important than fighting over boundary lines and/or limited resources.



Figure 1. Terrinalum/Mount Elephant. Source: author.

Unfortunately, Terrinalum offered deposits of red to black scoria for Western extractive industries to service road construction and domestic gardenesque requirements. Its commercial exploitation is today visible at the base of its cone. Quarrying occurred in patchy historical phases in the 1910s and from the 1950s to the 1990s before its pit closure. Privately owned until 2000, it was purchased by a charitable conservation entity, the Trust for Nature, and the local community. Their current aim, reminiscent of successful revegetation activities nearby Tower Hill, some 95 km southwest, a dormant volcano aged 7000–36,800 in its activity period, is to promote local tourism and to revegetate the volcano's flanks.

Approximately midway in the 85 km corridor between Bonan Youang and Terrrinalum today is the former gold mining settlement of Pitfield Diggings. Collectively, Pitfield and Pitfield Plains are within an undulating dry sclerophyll forest landscape southwest of Ballarat. In the 1850s, they were a southern part of the Ballarat gold fields along the Woady Yaloak River valley, a gold region running in an arc from Scarsdale to Rokewood. Gold was discovered at Pitfield in 1855, and it is conjectured that Pitfield was named after a gold escort officer. By the 1970s, gold mining had declined, the settlements had been abandoned, and the landscape shifted to mixed farming activities. Today, numerous mullock heaps stand up from the flat landscape and along the sides of the Woady Yaloak River valley.



Figure 2. Bonan Youang/Mount Buninyong. Source: author.

Bonan Youang is a dormant cinder cone volcano located 15 km southeast of Ballarat. The hill today visually overshadows the township of Buninyong. The summit of the mountain is between 719 to 745 m above sea level, given its cone edge elevations, and overlooks the Ballarat region. Situated within the country of the Wadawurrung People, Mount Buninyong is one of Victoria's most significant geological sites. The area surrounding Bonan Youang formed the responsibility of the Keyeet baluk, a subgroup of the Burrumbeet baluk clan, that was centred around the Ballarat locality that included Lake Burrumbeet and Lake Learmonth.

3. Geological Histories

The Western Victorian Volcanic Plains in southeast Australia are the third largest in the world after the Deccan in western India and the Snake River Plateau in Idaho in the United States. Comprising an area of the most recent period of volcanic activity in Australia and involving an area of at least 23,000 km², these plains are geologically termed the Pliocene–Holocene Newer Volcanics Province (NVP). The NVP is made up of over 416 volcanic locations primarily comprising short-lived monogenetic basaltic volcanoes that generally erupted only once for a small period or for small periods of time in different eras. Many NVP volcanoes are simple in character and form, resulting in a singular topographical landform. This landform typically possesses scoria cones being an accumulation of near-vent pyroclastic material, the gradual build-up of lava flows resulting in extensive lava shields. Additionally, there are very shallow-to-shallow bowl-shaped craters termed 'maars', occasional ash cones and domes, and some others that are not yet categorized within eruption typologies. While many craters and cones are somewhat geometrically conical in shape, many possess evidence of multiple eruptions, eruption cones with major cone edge breaches where the lava exited, and often host water bodies superficial to shallow-to-deep freshwater depending upon their post-eruption and post-erosion topographical character.

Within this newer volcanic plain lies numerous dormant volcano cones, a patchwork of sinuous watercourses, and low-lying saline or freshwater lake systems. Of these cones, most date from 5000–576,000 years in terms of the first eruptions and appear to have ceased their eruptions and lava flows some 7000–50,000 years ago depending upon the volcano [27]. For example, the Budj Bim creation story that underpins the Budj Bim National Landscape inclusion in the Australian National Heritage List [34] and, more recently, the Budj Bim Cultural Landscape inscription in the World Heritage List [35] record a dormant volcano that was active *c*.10,000–36,000 years ago [27].

The Ballarat region, as with much of southwest Victoria, has been predominately shaped through volcanic activity throughout the Pliocene (5.333 million to 2.58 million years ago), Pleistocene (2,580,000 to 11,700 years ago), and into the Holocene period (approximately 11,650 cal years before present (c.9700 BCE)) [35]. Due to early lava flows creating these flat plains, much of the region would have been a relatively featureless plain some 150 million years ago. The plains were then altered and lifted by earthquakes occurring in the late Tertiary period. An undulating landscape from this uplifted plain was created over 90 million years ago. Mount Cole and Mount Langi Ghiran, composed of resistant granite and metamorphic rocks, represent remnants of the former eroded plains or of the hills that rose above it [36]. Volcanoes, including Warreenheep and Bonan Youang to the east and southeast of Ballarat, erupted between 4.5 million and 15,000 years ago, covering the undulating countryside with lava which cooled into extensive basalt plains. Many of the lava flows journeyed along the course of rivers and creeks, and in the Ballarat and Yarram Yarram/Beaufort areas, many rivers were overlain by lava. Many of these lava flows blocked the flow of pre-volcanic eruption watercourses, creating shallow freshwater lakes such as Lake Burrumbeet [36–39].

There are approximately 200 breached scoria cones in Victoria. See Table 1 for a summation of the key volcanic eruptions and ethnographic events.

Geologically, Terrinalum first erupted approximately 184,000 years ago; such eruptions have a tolerance of 38,000 years [40]. Western District scoria cones, such as at Terrinalum, comprise small volcanoes with relatively steep sides. These cones were usually formed as the result of a single major episode of volcanic activity. Within the depressions of these scoria cones, small lava lakes or maars often form, catching rains or natural spring-fed waters in the depressions of these cones. Terrinalum hosts a lake, but such has been breached on one side of the cone, resulting in what is called a breached scoria cone [41–45].

In contrast, the scoria cone of Anakie Youang/Mount Anakie to the southeast of Ballarat is a southerly breached cone fed by small springs. This unusual three-cone assemblage, smuggled within two gently sloping granite monadnocks, hosts southerly breached cones as well as maars within the basins interconnecting the cones [46–48]. Culturally and significantly, one can see Terrinalum and Bonan Youang from the crest of Anakie Youang, but that is a different story.

Bonan Youang is the result of an assemblage of explosive volcanic eruptions of cinder rocks that were ejected with successive eruptions. Normally, cinder cones consist of steep-sided mountains with a rounded top; cinder cones generally range from about 50 to 200 m in height. While two types of rocks were produced from the volcano, cinder scoria and basalt, both hardened into lava. To explain, the scoria was blasted into the air resulting in air bubbles forming making it light. In contrast, basalt results from lava flows that flow across the ground surface caused by the heaviness of the flow. At Bonan Youang, two different volcanic cones exist. The most visually present is a volcanic cone that is geologically the most recent. Its activity caused extensive destruction of the older volcanic cone due to the eruptions of the newer cones and erosion. The first volcanic cone at Mount Buninyong occurred between 100,000 and 150,000 years ago. The second cone

occurred only 12,000 years ago [49]. The lava flows at Bonan Youang journeyed in two different directions. The first flow ventured to the east out of a flank crevice on the side. The second flow journeyed to the west over the summit of the volcano. The former lava flow produced large lava plains at Lal Lal Falls—another place of high cultural significance to the Wadawurrung People [50,51]. Additionally, Bonan Youang is an important recharge location for the groundwater system of the surrounding volcanic plains. This recharge attribute arises from its highly permeable scoria cone. Freshwater mineral springs are found at the base of the mount where the more recent volcanic material rests on underlying Ordovician rock beds.

Table 1. Geological and ethnographic incidents.

Years Ago	Geological Period	Geological Incidents	Wadawurrung Incidents and Notes	Australian Aboriginal Notes
2.6 million to 0 million years ago				
200,000–150,000 [c.184,000 Error (2σ) 38,000]		Terinalum cone eruptions		
150,000–100,000 [<i>c</i> .210,000 Error (2σ) 10,000]		Bonan Youang first cone eruptions		
<i>c</i> .70,000–40,000				Reputed first Australian Aboriginal arrivals across the Sahul landmass to Australia
c.61,000–40,000				Lake Mungo sites
c.60,000–40,000	Quaternary Period		Likely Wadawurrung arrival and occupancy of Wadawurrung country	
c.40,000			Wadawurrung occupancy recorded at Drysdale Lakes	
36,900 [Error (2 <i>σ</i>) 3,800]		Budj Bim first cone eruption		
36,800 [Error (2σ) 3,100]		Tower Hill first cone eruption		
12,000		Bonan Youang second cone eruptions		
1500–1200		Sea-level rise and the Tasmanian land bridge flooded		
1200-1000		Nerm/Port Phillip Bay flooded		
1000-800		Coriayo/Corio Bay flooded		
188 year = [1835]			First European colonisers arrive on the Wadawurrung shores and lands	

The context of this geology, from an ethnographic activity use perspective, also needs to be understood to appreciate the nature of these environmental conditions that informed Wadawurrung occupancy. For the last 5000 years, the climate of the locality has been relatively stable with warm, dry summers and mild, wet winters. Annual rainfall is less than 500 mm, and rain tends to be evenly spread throughout the year. Regular summer drought conditions inhibit vegetation growth, creating an environment highly susceptible to and dependent upon fire for renourishment Repeated drought conditions confine fresh water to perennial water holes or creeks and swamps [52].

4. Human Histories

For the Australian archaeological discipline, it is currently accepted that physical evidence shows that Aboriginal people migrated from southeast Asia to Australia approximately 60,000–70,000 years ago.

Evidence of early Aboriginal arrivals and occupancy are now evident in several locations across Australia. At Deaf Adder Gorge in the Northern Territory (NT), archaeological investigations evidence the arrival of humans approximately 60,000 years ago [53]. Additionally, in Arnhem Land in NT, archaeological investigations of the Madjedbebe sandstone rock shelter uncovered artefacts dating to 65,000 years ago [54]. In far-western arid New South Wales, at the now dry Lake Mungo north of the Murray River that was once on the edge of a large sea, archaeological investigations uncovered the buried remains of early Australians—termed 'Mungo Man' and 'Mungo Woman'—that evidenced that humans had reached southeastern Australia 40,000 years ago [55]. Across the recently formed Bass Strait, human remains dating from 35,000 years ago in Tasmania have been identified [56].

At the northwestern edge of the Western District's volcanic plains, investigations in one of the many sandstone rock shelters in Gariwerd/The Grampians identified artefacts dating some 22,000 years ago [57], whereas to the most eastern end of the volcanic plains, there are dates of approximately 30,000 years at the Keilor site [58,59]. Within the same volcanic plains, McNiven concluded that Aboriginal occupancy of the plains originated 20,000–40,000 years ago "most likely sporadic . . . reflecting ephemeral use by small groups of highly mobile hunters whose annual round encompassed other sections of the Western District" [60–62]. Along the southwest coast of Victoria, archaeological investigations within the coastal dunes at Moyjil, near Warrnambool, in the shadows of Tower Hill's volcanic eruption have pointed to a date of around 34,000 years ago for Gunditjmara occupation of that region [63–65].

The Wadawurrung People, from current archaeological carbon dating investigations, appear to have occupied their country some 40,000–50,000 years ago, at a time when many of these volcanoes were active, and ocean levels were lower. Carbon dating, for example, for the Drysdale freshwater lake system [66], is presently recording occupancies from 40,000 years ago when Bonan Youang was active, the overall landscape was wetter, supporting wet sclerophyll forests and woodlands, Nerm existed as an extensive grassland plain with the braided Birrarung Marr threading through the plain prior to 'The Time of Chaos' or 'The Big Flood' [67–69], and one could walk across the land bridge to present-day lutruwita/Tasmania [70].

Thus, the Wadawurrung People have witnessed some 40,000 years of geological landscape transformation and climate shift (change), enveloped these transformations as historical stories in their culture, and learnt adaptation and resilience strategies to cater for their transformations. The grammatical use of 'shift' rather than 'change' by Wadawurrung is deliberate because while our current culture talks about 'climate change' in small temporal increments, Wadawurrung talk about 'climate shift' analogous to the *longue durée* approach of the French Annals School in approaching history as exemplarnarrated by Fernand Braudel [71], drawing upon the philosophies of Marc Bloch and Lucien Lebvre [72].

This contemporary landscape has however changed over the last 20,000 years as the climate has shifted in its characteristics of which the Wadawurrung People were residing on this landscape. They were therefore witnesses to these volcanic eruptions as well as to changes in the physical fabric (vegetation, animals, birds, aquatic species, etc.) of their landscape. Today's scientists would call this 'climate change', whereas the Wadawurrung call this 'climate shift' because it is more of the same in their longitudinal historical eyes. Environmentally, climatic conditions fluctuated considerably in the past. The late Pleistocene and early Holocene environment within this region was one of gradual and continuous shifts. These changing environmental conditions provided different suites of resources (access to freshwater, flora, and fauna) for the Wadawurrung people inhabiting the region, requiring resilience and adaptation to these climate-informed shifts in resources and resource availability. Additionally, during the Pleistocene, sea levels were in general much lower than present, and thus, Nerm did not exist [68], and one could walk across the Bassian land bridge to lutruwita [70].

These environmental changes for this region can be summarised as follows: 20,000–15,000 years ago, the climate was cooler, drier, and windier than present, and there was a reduced number of vegetation species and less potable water availability; 15,000–12,000 years ago, the climate was more arid, but temperatures were warmer; 12,000–8000 years ago, the climate was becoming wetter and milder; 8000–5000 years ago, the climate was becoming wetter and 5000 years ago to present, temperatures are cooling and conditions are becoming drier [73,74].

Thus, Wadawurrung occupancy and activity needs to be framed and understood on the basis of these environmental and ethnogeological contexts and not on the basis of today's environmental conditions.

As an ethnographic note, in contrast to this archaeological historiography, Australian Aboriginals perceive that they have resided on the Australian continent 'since time immemorial'. Thus, Gregorian years are atemporal.

5. Wadawurrung Narratives

Because of the absence of conventional static history books in Wadawurrung culture, one must rely upon Wadawurrung language as the historical narrative voice. Their living cultural heritage history lies in their dynamic, oral narratives and geographical toponyms. The latter are multilayered and multifaceted, possessing multiple libraries of information, unlike Western or European place names that tend to celebrate a single physical place attribute or a heraldic parentage.

Therefore, it is important to understand the onomatology of place names before entering into the ethnogeology, ethnobotany, and/or ethnoecology of a Wadawurrung landscape [29].

In colonial and contemporary anthropological, ethnographic, linguistic, and First Nation's literature, diaries, lectures, and articles, etc., there are various spellings of the nomenclature for Terrinalum and Bonan Youang. This is because the Wadawurrung language, similar to Aboriginal languages, is oral. It was never written down. Thus, colonialists struggled with phonetically translating place names from the sounds that they were hearing, placing their own ethnic cultural baggage linguistic heritage into the equation (e.g., Scottish, Irish, English, Prussian/German, etc.), resulting in a meze of different English grammatical spellings. Thus, for Terinalum, there is Terinallum, Terrinallum, Djerrinallum, and Derrinallum; for Bonan Youang, there is Buninyong, Bonan Youang, Bonanyong, Boning Yong, Bonningyong, Bun.un.yong, Bunin-youang, and Bunningyowang. In addition, the subtlety for Ballarat is that it is Ballaarat in the Wadawurrung tongue.

Linguistically, amateur ethnographer and benevolent squatter James Dawson recorded that "Djerrinallum" means "sea swallow, or tern ... from flocks of these birds frequenting the marshes in the neighbourhood" [75]. Contemporary linguistic Clark, drawing upon Dawson's definition, attributed that the Wadawurrung "name from the mount, Djerrinallum, means 'nest of sea swallows, terns'" [75,76], appropriating it from toponymic expert Les Blake, "meaning either hill of fire or sea-swallow (i.e., a tern that flocks to salt marshes near mount)" [77]. A slightly earlier colonial source, squatter Andrew Porteous, who resided in the Carngham district in the 1860s-1870s, in 1878 stated that the name means "a hill of fire ... and is also the name of a local clan Djerrinallum gundidj" [78,79]. Anthropologist and a curator at the National Museum of Victoria from 1954–1964, Aldo Massola, wrote that it was "Home of Sea Terns, was so called by the aborigines because of the large number of these birds frequenting the marshes in the neighbourhood" [80]. Gunditimara man and linguist, Joel Wright, in his 'Derrinallum ba Buninyong', see Stories VI and VII in Table 2, stated that the name "Derrinallum" in Girai wurrung tongue, called by him "Keerray woorroong" language, means "home of sea swallows or terns frequenting neighbouring marshes" [81]. Wadawurrung Elder, Uncle Bryon Powell, narrated that "Terrinalum actually means place of the sea terns, which are like swallows" [82]. From an ethnogeological perspective, it is it relevant to note the reference to "a hill of fire" in the Porteous [78,79] definition, potentially volcanic fire, and to recognise that, given the linguistic characteristics of the Wadawurrung language, Terrinalum may indeed refer to the rich aquatic bird-harvesting marsh-land landscape of Waark that immediately skirts the actual mount rather than the mount itself. Dawson also defines 'Waark' as "Plains" being "Great pastoral plains, having Mount Elephant as a centre" [75].

Table 2 therefore quotes verbatim the respective stories collected or narrated by Stanbridge [80], Anonymous [81], Massola [82–84], Wright [85,86], and Powell [87]. There is very little Wadawurrung language associated with Pitfield Diggings. One reference points to the locality being called "Warrebaal, Place of Red Gums" [80], which is curious as Warre means 'sea' in the Wadawurrung tongue, whereas Biyal or Buul means River Red Gum (*Eucalyptus camaldulensis*) in the Wadawurrung language and has phonetic pronunciation similarities [83]. While the tree species certainly had provenance in this locality, their growth character would have been poor due to poor calcareous soils in the locality. Massola hypothesized that the locality "could have been a traditional fighting ground, where the challenged tribes [or individuals] would come to meet the challengers" [82]. Pitfield occurs on the banks of the Woady Yallock River (syn. Wardy Yallock Chain of Ponds), of which 'wardy' means large and 'yallock' (yalluk) water in the Parish of Mindai. The absence of any Wadawurrung names in colonial publications for Pitfield may also be explained by that fact that Mindai is the "great snake of Bunjil", and Bundjil is the Wadawurrung ancestral creator of beings and the landscape and thus an ancestral character little talked about by Wadawurrung in respect of its sacred status [77,88].

For Bonan Youang, the first colonial nomenclature recording was by a colonial settler, Katherine Kirkland, travelling from Djilang/Geelong to Trawalla in 1845, who believed it meant "big mountain." Kirkland wrote that:

"We were now in the Boning Yong district, which takes its name from a very high mountain, on the top of which is a large hole filled with water. It is quite round, as if made by man, and there are fish and muscles in it. Boning Yong is a native name, and means big mountain. I like the native names very much: I think it is a great pity to change them for English ones, is as often done". [89]

Fellow colonial settler Andrew Porteous wrote that the meaning of Buninyong means "man lying on his back with knees raised" [78], which is interesting because 'Ballaarat' means a "resting place" or "reclining or resting on an elbow" in contemporary the Wadawurrung language [50], so there are several nomenclature similarities that many be all culturally linked in this locality. William Withers, in the first post-contact history of Ballarat, wrote that:

"Buninyong, or, as the natives have it, Bunning-yowang, means a big hill like a knee bunning meaning knee, and yowang meaning hill. This name was given by the natives to Mount Buninyong because the mount, when seen from a given point, resembled a man lying on his back with his knee drawn up". [90]

Massola recorded that it means "knee mountain" from stories learnt from Gunditjmara Elder Annie Alberts because the mountain "has a vague resemblance to a man [Ancestor] lying on his back, with knees drawn up", which is very similar to Wright's translation [82–84]. Blake translated it as meaning "man lying on back with raised knees" [77] that echoes the Wadawurrung word for 'knee' being 'pun/bun'.

Turning to the ethnogeological stories about Terrinalum and Bonan Youang, seven versions of the creation story are in the public domain, and these are compiled in Table 2.

Despite the story collectors and authors spanning the last 200 years of residency in this region, the underlying story narrative about landscape moulding and creation remains the same. The core thread is about fire (e.g., volcanic eruptions, flames, redden skies, bellowing noises, and places of foreboding), the shaping and end-moulding explanation of the landscape (e.g., topographical shaping of the cones and their curtilages), and the omnipresence of these dormant apparitions as representative signals or emergences by one's ancestors (e.g., volcanoes). In terms of the latter, there is extensive literature about the significance of unusual climate changes and/or astronomical events as holding portent warnings, unhappinesses, or moral code/lore breaches, including writings by Dawson [75] and Massola [83], the 'Time of Chaos' for the Boon Wurrung People [69], Budj Bim for the Gunditjmara People [91], and Kareet Bareet for the Wadawurrung People [92].

Table 2. Stories about Bonan Youang/Mount Buninyong and Terrinalum/Mount Elephant.

Story I	Story II	Story III	Story IV	Story V	Story VI	Story VII	Story VIII
The Fight between Mount Buninyong and Mount Elephant (1861) [89]	[No Title] (1897) [81]	The Fight between Mount Buninyong and Mount Elephant (1962) [82]	The Fight between Mount Buninyong and Mount Elephant (1968) [83]	Ballarat (1969) [84]	Derrinallum ba Buninyong (2014) [85]	The Fight between Mount Buninyong and Mount Elephant (2014) [86]	Bonan Youang (2015) [87]
One of the legends that these tribes are fond of relating s that Tyrrinallum (Mount Elephant) and Bouningyoung (two volcanic hills about thirty miles apart) were formerly black men, that they quarrelled and fought, the former being armed with a leeowil and the latter with a hand spear, and after a prolonged contest Tyrrinallum thrus this pear in Bouningyoung's side, the cause of the present hollow in the side of the hill, which so infuriated him that he dealt the other a tremendous blow, burying the point of the leeowil in his head, which made the present large crater and knocked him to the spot where he now stands.	There is an aboriginal tradition that Mounts Buninyong and Eliphant [sic] once quarreled, and in an outburst of fiery wrath hurled rocks at each other. The quaint legend has hitherto furnished the only evidence that the blacks were here before the active volcanic period in the Ballarat district	Mount Elephant and Mount Buninyong were once men. Mount Elephant was in possession of a stone ave. Buninyong offered him some gold for it. Having agreed they met at what is now Pitfield Diggings for the exchange. Some time later Buninyong reconsidered and desired his gold back. Elephant refused. Buninyong sent him a fighting message, and the challenge was accepted. They met at Pitfield diggings. Elephant buried his spear in Buninyong's side, and the hole can be seen to this day. Elephant received a deadly blow on the head from Buninyong's stone axe. The gaping hole on elephant's head can also be seen to this day. The two men, mortally wounded, retired in opposite directions; their bodies, turned into mountains, can be seen to thay at the spots where they died.	Mount Elephant and Mount Buninyong were once men. Mount Elephant was in possession of a stone-axe. Buninyong offered him some gold for it. Having agreed they met at which is now Pitfield Diggins for the exchange. Some time latter Buninyong reconsidered, and desired his gold back. Elephant refused. Buninyong sent him a fighting message, and the challenge was accepted. They met at Pitfield Diggings. Elephant buried his spear in Buninyong's side, and the hole can be seen to this day. Elephant received a deadly bow on the head from Buninyong's stone-axe. The gaping hole in Elephant's head can also be seen. The two men, mortally wounded, retired in opposite directions. Their bodies turned into mountains at the spot where they died.	The legend of Mount Buninyong connects this mount with Mount Elephant which, although in the territory of another tribe, must have been well known to, and must have served as a landmark to the Wothowurong [sic.] and other tribesmen. The legend has it that Mount Elephant and Mount Buninyong were once men. Mount Elephant was in possession of a stone axe, which Buninyong coveted, and he offered him some gold for it. Having agreed to an exchange they met at what is now Pitfield Diggings. Some time later Buninyong tired of the axe, and desired his gold back, but Elephant refused. Buninyong became angry and sent him a fighting message, and the challenge was accepted. They met at Pitfield Diggings. After prolonged fighting Elephant buried his spear in Buninyong's side, and the hole can be seen to this day. Elephant received a deadly blow on the head from Buninyong's side, and the hole can be seen to this day. Elephant received a deadly blow on the head from Buninyong's stone axe. The gaping hole on Elephant's head can also be seen to this day. The two men, montally wounded, retired in opposite directions; their bodies, turned into mountains, can be seen today at the spots bwhere they died. It is obvious that this legend has post-European elements, since the cause of the quarrel, whereat it was originally, is stated to be gold. Gold could not have appeared in the original version, since its value only became known to the Aborgines through the white man. Still, the fact that gold was exchanged for a stome axe is an indication of the Europeans	Maleeyeeto Derrinallum ba Buninyong pooleetya marr Derrinallum-ngat moorreertyeerr-an Buninyong ngaki-n Derrinallum-ngat moorreetyeerr ba wana-n teen Buninyong wana-n yalkoonpan Derrinallum Ngootyoong marree wanyoo moorreetyeerr noongaka laka-n korr ba yalkoornpan-n Baribial kalo Buninyong wana-n ngootyoong marree-nyoong weelkyka Derrinallum Ngatook parng Buninyong yampeen Derrinallum teen karratpeeteen ween patpakal noongala wayapawanh Baribial Derrinallum katyat Buninyong ngeenan pa teen pakweeyt ngatook ngakee makatepa Derrinallum Buninyong maneen poorta peem moorreetyeerr Derrinallum leengkeel meeng peem ngootook ngakee makatepa Marr-arra matay tanu weelkyka meerreeng-u ba wata-u-ngal kalpeeran Marr-arra kalpeerran-anyeen meerreeng-i pa koong-ngal wata karrang-ngal	The fight between Mount Buninyong and Mount Elephant. Mount Elephant and Mount Buninyong were once men. Elephant was in possession of a stone axe. Buninyong saw bis axe and wanted it. Buninyong offered him some gold for it. Having agreed, they met at what is now Pitfield Diggings for the exchange. Some time later Buninyong reconsidered, and desired his gold back. Elephant refused. Buninyong sen thim a fighting message and the challenge was accepted. They met at Pitfield Diggings. Elephant buried his spear in Buninyong's stole and the hole can be seen to this day. Elephant received a deadly blow on the head from Buninyong's stone axe. The gaping hole in elephant's head can also be seen. The two men, mortally wounded, retired in opposite directions. Their bodies turned into mountains at the spot where they died.	We are here on Bongerimennin [Flagstaff Hill lookout in Linton], we have a view of Bonan Youang and Ierrinalum. Bonan Youang is now at Mount Buninyong, which means a man lying on his back with his knees raised. Terrinalum is now called Mount Elephant. Terrinalum actually means place of the sea terns, which are like swallows. The story is told by the old people that Bonan Youang and Terrinalum argued and challenged each other to a fight at a place called Pitfield. Terrinalum had a spear. Bonan Youang had an axe. And as they fought Terrinalum pierced Bonan Youang's side with his spear. Buninyong hit Terrinalum on the head and spilt his head with his axe. They were so angry that they spat fire at each other, but they were also hurt so they retired back to their campsites to rest. They turned to stone. You can still see them today. If you look at Bonan Youang you can see where Terrinalum's spear pierced his side. If you look at Terrinalum you can see where Bonan Youang's axe split his head open.

Story I was compiled by colonialist William Stanbridge (*c*.1861) from his meetings with the Wadawurrung People in the locality of Fiery Creek (near Trawalla and Yarram Yarram/Beaufort) in the Wadawurrung country. Stanbridge was one of the first colonialists to write in depth about Aboriginal astronomical traditions, leaving an indelible mark on education, philanthropy, women's suffrage, and Aboriginal knowledge in Victoria. His significant contribution to colonial knowledge of Aboriginal culture was documented in 'On the astronomy and mythology of the Aborigines of Victoria' (1857) [80] and 'Some particulars of the general characteristics, astronomy, and mythology of the tribes in the central part of Victoria, southern Australia' (1861) [93], of which this story was extracted from the latter publication. The account links the two volcanoes together, pointing to their same geological temporal eruptions and activity; the "prolonged contest" between the two volcanoes, pointing to the mutual longevity of their volcanic activity; the "tremendous blow" being major volcanic shocks and noisy eruptions; and the late calming of their last eruptions resulting in the cone formation and breaches. A leeowil is a timber-fabricated shield [94].

Story II quotes an extract from 'The [Melbourne] Argus' newspaper as published in 1897. The account links the two volcanoes together, pointing to their same geological temporal eruptions and activity; a quarrel between the two volcanoes; and "an outburst of fiery wrath hurled rocks at each other" being scoria-laden eruptions and a visual sense of fire and thus the reddened lava flows [81].

Story III was authored by an Italian-born anthropologist who was employed by the National Museum of Victoria in Melbourne between 1954–1964 [95]. Despite a questionable allegation resulting in his dismissal in 1964, perhaps caught in the high tensions of the Spencer-inspired dominant 'material culture school' and their divergent anthropological and archaeological philosophies of the time, he pioneered studies and recordings about Aboriginal culture in Victoria from a holistic perspective. Central were his extensive and numerous articles in the bimonthly 'Victorian Naturalist' (1884-) that recorded his meetings, learnings, and site inspections with many Aboriginal Elders and his post-dismissal cumulating publications, including 'Bunjil's Cave: Myths, Legends and Superstitions of the Aborigines of South-East Australia' (1968) [83], 'Journey to Aboriginal Victoria' (1970) [84], 'Aboriginal Mission Stations in Victoria' (1970), and 'The Aborigines of South-Eastern Australia As They Were' (1971).

In Story III, Massola records a narrative by a Gunditimara Elder, "an old full-blood aboriginal woman, Mrs Annie Alberts, who was born at Lake Condah [Mission Station]," recorded at the then Lake Tyers Aboriginal Station. Alberts had been culturally dispossessed and relocated from her home country and shifted to Gunai Kurnai country at Lake Tyers. While Massola noted the Stanbridge story version in the preamble, Alberts narrated a contemporary spin, adding a reference to gold. It needs to be mentioned that gold, prior to colonisation, was not a valuable commodity or resource to the Wadawurrung, and Massola equally observed that Alberts' "version has post-European components at least in the exchange of gold for a stone axe" because gold was not valued in traditional times; it was only after the 1850s' gold rushes that Aboriginal people began to value gold [82]. Pitfield Diggings was introduced to the story, which, pre-gold mining, was a poor, dry, sclerophyll-forested landscape, hosting little quality food and artefact resources, and thus, post-gold mining, it became an 'upside-down country' because of its wasteful despoilation of surface soil, vegetation, and cultural flows (i.e., potable watercourse flows and pondages). Again, Alberts' narrative links the two volcanoes together, pointing to their same geological temporal eruptions and activity; the "prolonged contest" being "sometime later" between the two volcanoes, pointing to the mutual longevity of their volcanic activity; the "tremendous blow" being a "deadly blow" being major volcanic shocks and noisy eruptions; and the late calming of their last eruptions resulting in the cone formations and breaches.

In Story IV, quoted from Massola's 'Bunjil's Cave: Myths, Legends and Superstitions of the Aborigines of South-East Australia' [83], published in 1968, Massola includes the

same story, changing it only slightly in grammar, but providing no preamble and discussion such as in the second story [84].

Massola repeated Story IV and expanded upon this narrative in Story V when he included it in his 'Journey to Aboriginal Victoria' published in 1969. In Story V, Massola substantiatively repeated Alberts' story, but re-cast it into conventional grammar as well as providing a postscript discussion. Again, the narrative links the two volcanoes together, pointing to their same geological temporal eruptions and activity; a protected quarrel between the two volcanoes, pointing to the mutual longevity of their volcanic activity; the "gaping hole" on Buninyong and a "deadly blow" for Elephant being major volcanic shocks and noisy eruptions; and the late calming of their last eruptions resulting in the cone formations and breaches [93].

In Story VI, Gunditjmara man, a linguist working for the Victorian Corporation for Aboriginal Languages (VCAL), Joel Wright, narrated the story as '*Derrinallum ba Buninyong*' in Keerray woorroong language (also spelt Girai Wurrung and variants) but did not disclose the descent source or provenance of the actual story, but it holds an association to Alberts' story given the inclusion of the exchange of an axe for gold [82,85,86].

Wright translates '*Derrinallum ba Buninyong*' into English for us in Story VII. His narrative version is abridged but still links the two volcanoes together, pointing to a "prolonged contest" being "sometime later" between the two volcanoes, pointing to the mutual longevity of their volcanic activity; the "tremendous blow" being a "deadly blow" being major volcanic shocks and noisy eruptions; and the late calming of their last eruptions resulting in the cone formations and breaches "where they died", thus ceasing their eruptions [86].

Story VII is offered by Wadawurrung Elder Bryon Powell as part of the ABC (television) 'Mother Tongue' series of recordings that have been more recently shifted in e-platform to YouTube videos. Powell has a long-standing role in establishing the Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC) (2007-) and its standing in advancing Wadawurrung living cultural heritage language [96], as evidenced in several publications, projects, and YouTube recordings [87]. This narrative is more spirited and offers elaborations of place names. Similar to Alberts' narrative, Powell links the two volcanoes together, pointing to their same geological temporal eruptions and activity; an implied length of fighting time between the two volcanoes, pointing to the mutual longevity of their volcanic activity; the acts of blows, splitting Terrinalum's head and piercing Bonan Youang's side; importantly, that they "spat fire at each other" being fiery volcanic eruption spurts; and the late calming of their last eruptions resulting in the cone formations and breaches [82].

Consistently, all seven stories talk of the Wadawurrung People seeking, hearing, feeling, and smelling the active movements and activities of Bonan Youang and Terrinalum. The majority clearly explain that both were active at the same time, that their habits were erratic but often violent, and could be heard and seen across some 100 km² of the Wadawurrung country but also countries across the Western District and the Nerm region before and after the 'Time of Chaos' that resulted in the flooding and creation of Nerm. This is a historical narrative, a historical text that is consistent in its explanations and recent in its geological temporal dimension, as the dates appear to be approximately *c*.40,000 to *c*.10,000 years ago, recognizing that we have evidence that Wadawurrung People entered onto this landscape some 40,000 years ago. Remember additionally, that this was but one set of active volcanoes in this landscape that we can evidence ethnogeologically and that there were clearly more volcanoes active during this small time envelope.

6. An Ethnogeology Tapestry

From an applied practice perspective for the Wadawurrung People, unfortunately, the contemporary materialist culture-inspired 'Aboriginal Heritage Act 2006' (Vic) [23], together with its predecessor 'Archaeological and Aboriginal Relics Preservation Act 1972' (Vic) [19] and Victoria-based archaeology discipline teachings [97] perpetuate this culture to the detriment of holistic tangible and intangible appraisals and assessments of

Wadawurrung values of a terrestrial place (and/or places, corridors, etc.) [98]. Of note, submerged landscapes, including those created only 800–1200 years ago, due to climate change-influenced sea-level rising events, are not addressed by this legislation [1]. This results in cultural heritage management plans (CHMP's) for Bonan Youang lacking a deeper tangible/intangible understanding of the values of this place, including its ethno-geology [99,100], and raises informational and statutory planning regime decision-making flaws when matters are dealt with under the 'Planning & Environment Act 1987' (Vic) [101] and thereupon through the land use development appeals embodied the Victorian Civil & administrative Tribunal (VCAT) in Victoria. While there is an absence of CHMPs at Terinallum, a VCAT decision lacks any appreciation for First Nations' cultural values for the ethnogeology of the place [46,102,103].

From a conclusionary perspective, giving due weight in Western deliberations about land use development and the policy of First Nations (and thus Wadawurrung values) is still in its infancy. What is clear is that there is considerable knowledge to be learnt, respected, and only some may be disclosed as some may be still subject to language and story revival, and some will remain out of the public domain, especially given the past colonial impacts on their country. The multiple stories of Bonan Youang and Terrinalum are in the public domain but are scarcely understood and respected to date.

By citing one geological incident example, this article demonstrates the merits of better understanding the ethnographic histories of First Nations People when linked to climate change and ethnogeological events. Such narratives offer an insight into the nature and characteristics of volcanic or geological transformation incidents and often a hypothesis as to the temporality of the incident and/or incidents. The seven stories cited offer a consistent intangible narrative or a tangible sequence of volcanic events and culturally explain the resulting physical formation of the current dormant volcanic landscape.

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References

- Jones, D.S. Submission: Viva Energy Gas Terminal Geelong—Inquiry and Advisory Committee, 31 May 2022; Wadawurrung Traditional Owners Aboriginal Corporation: Ballarat, Australia, 2022.
- 2. Murray, J. Of pipestone, thunderbird nests, and ilmenite: Ethnogeology, myth, and the renaming of a world. *Geol. Soc. Am. Abstr. Programs* **1996**, *28*, 34.
- Murray, J. Ethnogeology and Its Implications for the Aboriginal Geoscience Curriculum. J. Geosci. Educ. 1997, 45, 117–121. [CrossRef]
- 4. Semken, S.C.; Morgan, F. Navajo Pedagogy and Earth Systems. J. Geosci. Educ. 1997, 45, 109–112. [CrossRef]
- 5. Semken, S.C.; Morgan, F. Geology, Navajo knowledge, and a sense of place in the central Colorado Plateau. *Geol. Soc. Am. Abstr. Programs* **1997**, *29*, A-471.
- Semken, S.C.; Ward, E.G.; Moosavi, S.; Chinn, P.W. Place-based education in geoscience: Theory, research, practice, and assessment. J. Geosci. Educ. 2017, 65, 542–562. [CrossRef]
- Cahir, F.; Clark, I.D.; Clarke, P.A. Aboriginal Biocultural Knowledge in South-Eastern Australia; CSIRO Publishing: Collingwood, Australia, 2018.
- Tindale, N. *Encyclopedia of Literature*; Australian (Aborigine); Shipley, J.T., Ed.; Philosophical Library: New York, NY, USA, 1946; pp. 74–78; quote p. 76.
- 9. Seddon, G. Sense of Place; University of Western Australia Press: Nedlands, WA, Australia, 1972.
- 10. Seddon, G. Man and Landscape in Australia: Towards an Ecological Vision; Australian UNESCO Committee for Man and the Biosphere, Pub No. 2; Australian Government Publishing Service: Canberra, ACT, Australia, 1976.
- 11. Mulvaney, D.J. The Prehistory of Australia; Thames & Hudson: London, UK, 1969.
- 12. Griffiths, B. Deep Time Dreaming: Uncovering Ancient Australia; Black Inc.: Collingwood, Australia, 2018.

- 13. McBryde, I. Australia's once and future archaeology. Archaeol. Ocean. 1986, 21, 13–38. [CrossRef]
- 14. McBryde, I. Wil-im-ee Moor-ring: Or, Where do axes come from? Mankind 1978, 11, 354–382. [CrossRef]
- 15. Rose, D.B. *Nourishing Terrains: Australian Aboriginal Views of Landscape and Wilderness;* Australian Heritage Commission: Canberra, ACT, Australia, 1996.
- 16. Mulvaney, D.J. Classification and typology in Australia: The first 340 years. In *Stone Tools as Cultural Markers: Change, Evolution and Complexity*, 267; Wright, R.V.S., Ed.; Australian Institute of Aboriginal Studies: Canberra, ACT, Australia, 1977.
- 17. McCarthy, F.D. Aboriginal Relics and their Preservation. Mankind 2009, 2, 120–126. [CrossRef]
- 18. Shellshear, J. An appeal for the preservation of prehistoric remains in Australia. Aust. Mus. Mag. 1937, 2, 169–175.
- Victoria. Archaeological and Aboriginal Relics Preservation Act 1972 (Vic). 1972. Available online: http://classic.austlii.edu.au/au/ legis/vic/repealed_act/aaarpa1972421/ (accessed on 11 December 2022).
- Powell, B.; Jones, D.S. Protecting *Anakie Youang*: Navigating planning and Aboriginal heritage laws and instruments to protect Wadawurrung intangible heritage. In *Architectural Conservation in Australia, New Zealand & the Pacific Islands: National Experiences* & *Practice*; King, R., Stubbs, J., Chapman, W., Ellis, M., Eds.; Routledge: Abingdon, UK, 2023.
- 21. Smith, L. A history of Aboriginal heritage legislation in south-eastern Australia. Aust. Archaeol. 2000, 50, 109–118. [CrossRef]
- 22. Griffiths, T. Hunters and Collectors: The Antiquarian imagination in Australia; Cambridge University Press: Melbourne, Australia, 1996; pp. 56–85.
- 23. Victoria. *Aboriginal Heritage Act 2006 (Vic)*. 2006. Available online: https://www.legislation.vic.gov.au/in-force/acts/aboriginal-heritage-act-2006/024 (accessed on 11 December 2022).
- Benjamin, J.; Ulm, S. The Big Flood: Responding to sea-level rise and the Inundated Continental Shelf. In *The Oxford Handbook of the Archaeology of Indigenous Australia and New Guinea*; McNiven, I.J., David, B., Eds.; Oxford University Press: Oxford, UK, 2021; pp. 1–19.
- 25. Nunn, P.D.; Reid, N.J. Aboriginal memories of inundation of the Australian coast dating from more than 7000 years ago. *Aust. Geogr.* **2016**, 47, 11–47. [CrossRef]
- Holdgate, G.R.; Wagstaff, B.; Gallagher, S.J. Did Port Phillip Bay nearly dry up between ~2800 and 1000 cal. yr BP? Bay floor channelling evidence, seismic and core dating. *Aust. J. Earth Sci.* 2011, 58, 157–175. [CrossRef]
- 27. Wilkie, B.; Cahir, F.; Clark, I.D. Volcanism in Aboriginal Australian oral traditions: Ethnographic evidence from the Newer Volcanics Province. *J. Volcanol. Geotherm. Res.* **2020**, *403*, 106999. [CrossRef]
- 28. Pullin, R. The Artist as Traveller: The Sketchbooks of Eugene von Guérard; Art Gallery of Ballarat: Ballarat, Australia, 2018; pp. 96–98.
- 29. Jones, D.S. *Exploring Place in the Australian Landscape—In the Country of the White Cockatoo*; Palgrave/Springer Nature Singapore Pte Ltd.: London, UK, 2022.
- 'Boldrewood, R'. [T.A. Browne]. Old Melbourne Memories; Sayers, C.E., Ed.; George Robertson & Co.: Melbourne, Australia, 1884; Facsimile, Ed.; William Heinemann: Melbourne, Australia, 1969; p. 13.
- 31. Bride, T.F. Letters From Victorian Pioneers, Being A Series of Papers on the Early Occupation of the Colony, The Aborigines, Etc; Sayers, C.E., Ed.; Victorian Government Printer: Melbourne, Australia, 1898; Facsimile, Ed.; Heinemann: Melbourne, Australia, 1969; p. 69.
- 32. McGregor, P.; Oaten, L. Mount Elephant: A History of the Derrinallum and Darlington District; P. McGregor & L. Oaten: Derrinallum, Australia, 1985; p. 1.
- Clark, I.D. Aboriginal Languages and Clans: An Historical Atlas of Western and Central Victoria, 1800–1900; Department of Geography and Environmental Science, Monash University: Clayton, Australia, 1990; (Monash Publications in Geography No. 37).
- 34. Australia. National Heritage Places—Budj Bim National Heritage Landscape. 2004. Available online: https://www.dcceew.gov. au/parks-heritage/heritage/places/national/budj-bim (accessed on 11 December 2022).
- 35. UNESCO. Budj Bim Cultural Landscape. 2019. Available online: https://whc.unesco.org/en/list/1577/ (accessed on 11 December 2022).
- Land Conservation Council. Melbourne Area District 2: Study Report; Land Conservation Council: Melbourne, Australia, 1980; pp. 31–33.
- 37. Yates, H. The basalts and granitic rocks of the Ballarat district. Proc. R. Soc. Vic. 1954, 66, 63–101.
- 38. King, R.L. Geological Features on the Ballarat 1:250 000 Sheet. Geological Survey of Victoria Unpublished Report 1990/8. Available online: https://www.vgls.vic.gov.au/client/en_AU/VGLS-public/search/detailnonmodal/ent:\$002f\$002fSD_ILS\$002 f0\$002fSD_ILS:110152/ada?qu=Fossils.&d=ent%3A%2F%2FSD_ILS%2F0%2FSD_ILS%3A110152%7EILS%7E147&ic=true&ps= 300&h=8 (accessed on 11 December 2022).
- Cochrane, G.W.; Quick, G.W.; Spencer-Jones, D. Introducing Victorian Geology; Geological Society of Australia (Victorian Division): Melbourne, Australia, 1991.
- Oostingh, K.F.; Jourdan, F.; Matchan, E.L.; Phillips, D. 40 Ar/39 Ar geochronology reveals rapid change from plume-assisted to stress-dependent volcanism in the Newer Volcanic Province, SE Australia. *Geochem. Geophys. Geosystems* 2017, 18, 1065–1089. [CrossRef]
- Grayson, H.J.; Mahony, D.J. The geology of the Camperdown and Mount Elephant districts. Descriptive of Geological Quarter— Sheet Maps Mos. 8 N.E. and 17 S.E. (new Series). *Geol. Surv. Vic. Mem.* 1910, 9, 1–26.

- 42. Ollier, C.D. Landforms of the Newer Volcanic Province of Victoria. In *Landform Studies from Australia and New Guinea;* Jennings, J.N., Mabbutt, J.A., Eds.; ANU Press: Canberra, ACT, Australia, 1967; pp. 315–339.
- 43. Rosengren, N.J. *Eruption Points of the Newer Volcanics Province of Victoria: An Inventory and Evaluation of Scientific Significance;* National Trust of Australia and Geological Society of Australia, Victorian Division: Melbourne, Australia, 1994.
- 44. Singleton, O.P.; Joyce, E.B. Catalogue of the post-Miocene volcanoes of Victoria. 1970; unpublished.
- 45. Wellman, P. Potassium-argon ages on the Cainozoic volcanic rocks of eastern Victoria, Australia. J. Geol. Soc. Aust. 1974, 21, 359–376. [CrossRef]
- 46. Wadawurrung Traditional Owner Aboriginal Corporation v Greater Geelong CC & Others 2022 VCAT 482. Available online: http://www.austlii.edu.au/ (accessed on 31 January 2023).
- Rhodes, D. Desktop Heritage Review of Extensions to Aerolite Quarry, Brownes Road Anakie, Proposed under Work Authority 1535: Report for Rigby Cooke Lawyers Pty Ltd.; Heritage Insight Pty Ltd.: Clifton Hill, ON, Canada, 2014.
- Aerolite Quarries Pty Ltd v Greater Geelong CC VCAT 1611. Available online: http://www.austlii.edu.au/ (accessed on 31 January 2023).
- 49. Geocaching. Mount Buninyong Crater. 2008. Available online: http://www.geocaching.com/seek/cache_details.aspx?guid=e2 55a4e8-facf-4624-b9f1-23c7ed523074 (accessed on 11 December 2022).
- 50. Wadawurrung Traditional Owners Aboriginal Corporation. *Paleert Tjaara Dja: Wadawurrung Healthy Country Plan;* WTOAC: Ballarat, Australia, 2020.
- 51. Clark, I.D. The ebb and flow of tourism at Lal Lal Falls, Victoria, a tourism history of a sacred Aboriginal site. *Aust. Aborig. Stud.* **2002**, *2*, 45–53.
- 52. Land Conservation Council. Melbourne Area District 2; Land Conservation Council: Melbourne, Australia, 1973; pp. 34-40.
- 53. Veth, P.; Ward, I.; Manne, T.; Ulm, S.; Ditchfield, K.; Dortch, J.; Hook, F.; Petchey, F.; Hogg, A.; Questiaux, D.; et al. Early human occupation of a maritime desert, Barrow Island, North-West Australia. *Quat. Sci. Rev.* **2017**, *168*, 19–29. [CrossRef]
- 54. Clarkson, C.; Jacobs, Z.; Marwick, B.; Fullagar, R.; Wallis, L.; Smith, M.; Roberts, R.G.; Hayes, E.; Lowe, K.; Carah, X.; et al. Human occupation of northern Australia by 65,000 year ago. *Nature* **2017**, *547*, 306–310. [CrossRef]
- 55. Bowler, J.M.; Johnston, H.; Olley, J.M.; Prescott, J.R.; Roberts, R.G.; Shawcross, W.; Spooner, N.A. New ages for human occupation and climate change at Lake Mungo, Australia. *Nature* 2003, 421, 837–840. [CrossRef] [PubMed]
- Allen, J. Warreen Cave. In Report of the Southern Forests Archaeological Project; Allen, J., Ed.; School of Archaeology, La Trobe University: Bundoora, Australia, 1996; Volume 1, pp. 137–167.
- 57. Bird, C.F.M.; Frankel, D.; van Waarden, N. New radiocarbon determinations from the Grampians-Gariwerd region, western Victoria. *Archaeol. Ocean.* **1998**, *33*, 31–36. [CrossRef]
- 58. Coutts, P.J.F.; Cochrane, R.M. The Keilor Archaeological Area; Government Printer: Melbourne, Australia, 1977.
- 59. Bowler, J.M. Recent developments in reconstructing late Quaternary environments in Australia. In *The Origin of the Australians;* Kirk, R.L., Thorne, A.G., Eds.; Australian Institute of Aboriginal Studies: Canberra, ACT, Australia, 1976; pp. 55–77.
- 60. McNiven, I.J. Aboriginal settlement of the saline lake and volcanic landscapes of Corangamite Basin, western Victoria. *Artefact* **1998**, 21, 63–94.
- 61. Lourandos, H. Pleistocene Australia: Peopling a continent. In *The Pleistocene Old World: Regional Perspectives*; Soffer, O., Ed.; Plenum: New York, NY, USA, 1987; p. 152.
- 62. Lourandos, H. Continent of Hunter-Gatherers: New Perspectives in Australian Prehistory; Cambridge University Press: Cambridge, UK, 1997; p. 225.
- McNiven, I.J.; Crouch, J.; Bowler, J.M.; Sherwood, J.E.; Dolby, N.; Dunnand, J.E.; Stanisic, J. The Moyjil Site, South-West Victoria, Australia: Excavation of a Last Interglacial Charcoal and Burnt Stone Feature—Is it a Hearth? *Proc. R. Soc. Vic.* 2019, 130, 94–116. [CrossRef]
- 64. Bowler, J.M.; Price, D.M.; Sherwood, J.E.; Carey, S.P. The Moyjil Site, south-west Victoria, Australia: Fire and environment in a 120,000-year coastal midden Nature or People? *Proc. R. Soc. Vic.* **2018**, *130*, 71–93. [CrossRef]
- 65. Matchan, E.L.; Phillips, D.; Jourdan, F.; Oostingh, K. Early human occupation of southeastern Australia: New insights from 40Ar/39Ar dating of young volcanoes. *Geology* **2020**, *48*, 390–394. [CrossRef]
- 66. Ecology & Heritage Partners Pty Ltd. Drysdale Bypass, Jetty Road to Whitcombes Road, Drysdale, Victoria: Aboriginal Cultural Heritage Management Plan Number 13839; Amendment 2: 12 July 2019; Ecology & Heritage Partners Pty Ltd.: Ascot Vale, Australia, 2018.
- Reid, N.; Nunn, P.D.; Sharpe, M. Indigenous Australian Stories and Sea-Level Change. In FEL XVIII: 18th Foundation for Endangered Languages Conference, Okinawa, Japan, 17–20 September 2013–Indigenous Languages: Their Value to the Community. Proceedings of the 18th FEL Conference; pp. 82–87. Available online: https://hdl.handle.net/1959.11/18665 (accessed on 30 January 2023).
- 68. Briggs, C. Aboriginal Reconciliation, [Victorian]. Hansard, 31 May 2000, 1994–1995.
- 69. Briggs, C. The Filling of the Bay—The Time of Chaos. In *Nyernila—Listen Continuously: Aboriginal Creation Stories of Victoria*; Arts Victoria: Southbank, Australia, 2014; pp. 36–39.
- 70. Bowdler, S. The Bass Strait Islands revisited. Quat. Int. 2015, 385, 206–218. [CrossRef]
- 71. Braudel, F. L'Histoire et sciences sociales: La longue durée. *Réseaux* 1987, 5, 7–37. [CrossRef]

- 72. Grote, M. What Could the 'Longue Duree' Mean for the History of Modern Sciences? Greenstone: Boston, MA, USA, 2015.
- 73. Kershaw, P. Environmental Change in Australia. Antiquity 1995, 69, 656–675. [CrossRef]
- Dodson, J.; Fullagar, R.; Head, L. Dynamics of Environment and People in the Forested Crescents of Temperate Australia. In Australia and the South-West Pacific; Dodson., J., Ed.; Longman Cheshire: Melbourne, Australia, 1992; pp. 115–159.
- 75. Dawson, J. Australian Aborigines: The Languages and Customs of Several Tribes of Aborigines in the Western District of Victoria; lxxxix; George Robertson: Melbourne, Australia, 1881.
- 76. Clark, I. Multiple Aboriginal Placenames in Western and Central Victoria. In *Indigenous and Minority Placenames: Australian and International Perspectives;* Kostanski, L., Hercus, L., Eds.; ANU Press: Canberra, ACT, Australia, 2014; p. 240.
- 77. Blake, L. Place Names of Victoria; Rigby Ltd.: Adelaide, SA, Australia, 1977.
- 78. Porteous, A. Mental Character. In *The Aborigines of Victoria: With Notes Relating to the Habits of the Natives of Other Parts of Australia and Tasmania/Compiled from Various Sources for the Government of Victoria by R. Brough Smyth. John Ferres; Smythe, R.B., Ed.; Government Printer: Melbourne, Australia, 1878; Volume 2, p. 27.*
- 79. Clark, I.D. The northern Wathawurrung and Andrew Porteous, 1860–1877. Aborig. Hist. 2008, 32, 97–108.
- 80. Stanbridge, W.E. On the astronomy and mythology of the Aborigines of Victoria. Proc. Philos. Inst. Vic. Trans. 1857, 2, 137–140.
- 81. Anonymous. Untitled article. The [Melbourne] Argus, 12 October 1897, 5.
- 82. Massola, A.G. Two Aboriginal Legends of the Ballarat District. Victorian Naturalist 1962, 79, 111.
- 83. Massola, A.G. Bunjil's Cave: Myths, Legends and Superstitions of the Aborigines of South-East Australia; Lansdowne Press: Melbourne, Australia, 1968.
- 84. Massola, A.G. A Journey to Aboriginal Victoria; Rigby Ltd.: Adelaide, SA, Australia, 1969; pp. 69–70.
- 85. Wright, J., Translator; Derrinallum ba Buninyong. In *Nyernila—Listen Continuously: Aboriginal Creation Stories of Victoria*, 60; Arts Victoria: Southbank, Australia, 2014; p. 60.
- 86. Wright, J. The fight between Mount Buninyong and Mount Elephant. In *Nyernila—Listen Continuously: Aboriginal Creation Stories* of *Victoria*; Arts Victoria: Southbank, Australia, 2014; p. 61.
- 87. Powell, B. Mother Tongue—Wadawurrung language: Bonan Youang. *Open ABC*. 2015. Available online: https://www.youtube. com/watch?v=o-aDjhooGYM (accessed on 11 December 2022).
- 88. Wadawurrung Traditional Owners Aboriginal Corporation. *Wadawurrung Country of the Victorian Volcanic Plains;* Wadawurrung Traditional Owners Aboriginal Corporation: Ballarat, Australia, 2019.
- 89. Kirkland, K. Life in the Bush. By a Lady. In *Chambers's Miscellany of Useful and Entertaining Tracts;* William and Robert Chambers: London, UK, 1845; Volume 1, pp. 1–39, p. 27.
- 90. Withers, W.B. The History of Ballarat, from the First Pastoral Settlement to the Present Time, 2nd ed.; F.W. Niven & Co.: Ballarat, Australia, 1887; p. 13.
- 91. Lovett, J. The Creation of Budj Bim. In Nyernila—Listen Continuously: Aboriginal Creation Stories of Victoria; Couzens, V., Translator; Arts Victoria: Southbank, Australia, 2014; pp. 58–59.
- 92. Powell, B. Mother Tongue—Wadawurrung language: Kareet Bareet. *Open ABC*. 2015. Available online: https://www.youtube. com/watch?v=MLjJbjz2JN8 (accessed on 11 December 2022).
- 93. Morieson, J. The Night Sky of the Boorong: Partial Reconstruction of a Disappeared Culture, North-West Victoria. unpublished Master's Art Thesis, University of Melbourne, Melbourne, Australia, 1966.
- 94. Stanbridge, W.E. Some particulars of the general characteristics, astronomy, and mythology of the tribes in the central part of Victoria, southern Australia. *Trans. Ethnol. Soc. Lond.* **1861**, *1*, 286–304. [CrossRef]
- 95. Mulvaney, D.J. Massola, Aldo Giuseppe (1910–1975), Australian Dictionary of Biography. 15. 2000. Available online: https://adb.anu. edu.au/biography/massola-aldo-giuseppe-11083 (accessed on 11 December 2022).
- Powell, B.; Tournier, D.; Jones, D.S.; Roös, P.B. Welcome to Wadawurrung Country. In Geelong's Changing Landscape: Ecology, Development and Conservation; Jones, D.S., Roös, P.B., Eds.; CSIRO Publishing: Melbourne, Australia, 2019; pp. 44–84.
- Blake, K.A. Reflections on Western Archaeology Training from a First Nation's Perspective: Whose Knowledge and Whose Methods? In *Indigenous Engineering for an Enduring Culture*; Kutay, C., Leigh, E., Prpic, J.K., Ormond-Parker, L., Eds.; Cambridge Scholars Publishing: Cambridge, UK, 2022; pp. 259–271.
- Jones, D.S. Tapestries of Place, Spirit, Times, Meanings and Values: The Heritage of First Nations in Australia and New Zealand/Aotearoa. In Routledge Handbook on Cultural Landscapes in the Asia-Pacific; Silva, K.D., Taylor, K., Jones, D.S., Eds.; Routledge: Abingdon, UK, 2022; pp. 281–293.
- 99. WestVic Heritage Management. Proposed Tourism Establishment at CA3 Yendon No.2 Road, Buninyong: Cultural Heritage Management Plan—Desktop, Standard and Complex Assessments- AV Management Plan Number: 17028; WestVic Heritage Management Pty Ltd.: Linton, VIC, Australia, 2020.
- 100. Fiddian, J. National Broadband Network Cable Route, Mt Buninyong Scenic Reserve, Victoria; CHMP #12174; Biosis: Port Melbourne, VIC, Australia, 2012.
- 101. Victoria (1987), Planning & Environment Act 1987 (Vic). Available online: https://www.legislation.vic.gov.au/in-force/acts/planning-and-environment-act-1987 (accessed on 11 December 2022).

102. Sarto & Ors v Corangamite SC VCAT 626. Available online: http://www.austlii.edu.au/ (accessed on 31 January 2023).
103. Clifftop at Hepburn Pty Ltd v Ballarat CC VCAT 910. Available online: http://www.austlii.edu.au/ (accessed on 31 January 2023).

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