Boundaries, Connections and Cultural Heritage Management

Challenges:

The Rock Art of the Chillagoe – Mungana Limestone Belt,
Queensland, Australia

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Abstract

This PhD thesis focuses on the rock art found along the Chillagoe-Mungana limestone belt, 170 kilometres west of Cairns, in the semi-arid interior of Queensland. The Chillagoe-Mungana limestone belt borders the traditional estates of three Aboriginal groups, the Wakaman, the Wakara, and the Kuku Djungan. This project investigates the rock art found along the common boundaries of these territories, specifically examining what social and economic information the rock art encodes about the Aboriginal groups of north Queensland prior to European contact. The Chillagoe-Mungana district is ideally placed for an investigation into junction zone rock art. Not only does the limestone belt intersect the territory of multiple local Aboriginal groups in the late Holocene, it also serves as the transitional boundary zone between two of the major rock art provinces in Queensland, the intersection between the North/Central Queensland Highlands region and Cape York Peninsula. Analysis of temporal and geographical changes in the distribution of the motifs of the Chillagoe rock art assemblage provide insight into the nature of rock art junctions, not only in Queensland, but also across Australia. This PhD project has two components: first, to record rock art sites in the Chillagoe-Mungana region in order to illuminate the socio-cultural context of north-eastern Australia; and second, to examine the cultural heritage management challenges faced by Aboriginal groups in the current Australian social, economic and legislative context.

During this project, across six sections of the Chillagoe limestone belt, 49 rock art sites were surveyed and 2142 individual motifs were recorded. This project found that motifs in the Chillagoe area were produced using six different techniques (painting, drawing, stencilling, engraving, printing and combination) and in five different motif categories (figurative, non-figurative, tracks, stencils and prints). The stylistic characteristics of the rock art assemblage, however, are not spread uniformly across the limestone belt. In particular, the presence and concentration of stencils and engravings and the occurrence of figurative motifs varies within the six survey sections, with a distinct contrast between the north-eastern and western sides of the limestone belt. Using the tenets of information exchange and fissioning/regionalisation theory, the patterns in the geographic distribution of the motif forms and production types were compared to determine any correlations with the known ethnographic boundaries of the local
Aboriginal groups in the recent past. The analysis demonstrated that the Chillagoe rock art assemblage reflects the variability in the rock art stylistic characteristics of the groups who surround the limestone belt, with certain geographic regions of the survey area exhibiting greater stylistic similarity, and, therefore, greater socio-cultural connection, with the specific groups who border those particular sites. The differing territorial boundaries and various cultural influences of the region are visible in the rock art assemblage. This regionalisation may not be solely a late Holocene occurrence, however. The deeply engraved motifs, for example, when placed in the wider regional context, suggest that regionalisation in this part of north Queensland may have begun in the late Pleistocene or early Holocene.

Interviews with Traditional Owners supplement the archaeological findings, providing insight into the social and cultural significance of limestone belt for the neighbouring Aboriginal people. The results from the rock art survey support the traditional knowledge associated with the limestone belt in which the karst towers served as a shared buffer zone for the local groups, a place for communal meetings, exchange and ceremony, with activities concentrated at discrete focal points in the landscape. Certain figurative motifs and totemic track designs appear to perform boundary marking and signposting functions. Significant too is the evidence that Aboriginal people utilised the twilight and fully dark zones of the limestone caves to produce stencils and prints, an occurrence rarely documented in northern Australia. These findings provide a more nuanced understanding of the socio-cultural convergences in north Queensland, and the nature and extent of the Chillagoe district’s social and economic interaction with surrounding areas.

In addition to the examination of the rock art of the Chillagoe area, this PhD thesis also highlights the challenges faced by Aboriginal groups who wish to protect their cultural heritage in the current social, economic and legislative climate. The various obstacles to effective cultural heritage management are examined, and recommendations for the strengthening of cultural heritage protection in Queensland and elsewhere in Australia are proposed.
Statement of Originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Nicola B. Winn
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Chapter 1 Introduction

1.1 Research overview

Rising out of the plains 170 kilometres west of Cairns in northern Queensland, Australia, a series of limestone formations dominate the semi-arid landscape. These limestone towers (or karst) stretch for 60 kilometres and contain over 560 caves and many hundreds of rock shelters. Known as the Chillagoe – Mungana limestone belt, these karst formations were a centre for rock art production and occupation for Aboriginal people for 30,000 years.

While Aboriginal rock art in other parts of Queensland has been extensively researched, large areas of the semi-arid interior of north Queensland have had only superficial, if any, investigation. Until now, no comprehensive rock art surveys had been conducted in the Chillagoe – Mungana region in the last twenty years, and there remained numerous undocumented rock art sites in the district. Several archaeological excavations, rock art surveys and direct dating of rock art motifs have been undertaken in the limestone belt prior to this PhD research (Armitage et al. 1998; Campbell 1982, 1984, 2000; Campbell et al. 1996; Campbell and Mardaga-Campbell 1990, 1993; David 1990ab, 1991, 1992ab, 1996a; David et al. 1999; David and Chant 1995; David and David 1998; Lamb 1996; Mardaga-Campbell 1986, 1995; Watchman and Campbell 1996; Watchman and Hatte 1996; Wright 1971). These previous studies furnished preliminary evidence for the habitation and rock art production of the area. However, several key gaps remained in the archaeological investigation, gaps which this project addresses. This PhD thesis focuses on the Chillagoe-Mungana limestone belt in order to determine the social, cultural and territorial interactions of Aboriginal groups in north-eastern Australia.

The Chillagoe-Mungana limestone belt forms the boundary of the traditional territories of three Aboriginal groups, the Wakaman, the Wakara, and the Kuku Djungan. This project investigates the rock art found along the borders of these social territories, specifically concentrating on what social and economic information the rock art encodes about the Aboriginal groups of north Queensland in the late Pleistocene and Holocene.

In addition to investigating the rock art and cultural links of the Chillagoe - Mungana karst area, the rock art of this region can be used as a case study into rock art junction
zones elsewhere in Australia. Stylistic variation studies of rock art have been an important method for determining the extent of bounded trade and exchange networks (e.g. Brady 2010; Cole and David 1992; David 2002; David and Lourandos 1998; Franklin 1993; McDonald 1999, 2005; McNiven 1999; Morwood 2002; Ross 1997, 1999; Veth and MacDonald 2002). Much recent work in rock art research has focused on identifying different provinces of rock art, areas of stylistic similarity and cultural affiliation, such as Cape York, the Pilbara and Arnhem Land (e.g. Franklin 2007; David and Cole 1990; David and Chant 1995; Mulvaney 2011; Ross 2013; Taçon 2013). Much of the Australian continent has been divided up into different rock art provinces that are stylistically and culturally distinct from neighbouring regions. However, while many of these provinces have been examined to determine their stylistic characteristics and changes through time, few rock art studies have focused on the junctions between these regions, the boundary areas where different rock art regions intersect. The Chillagoe - Mungana district is ideally placed for an investigation into junction zone rock art.

![Limestone karst tower – Chillagoe, north Queensland](image)

1.2 Aims of the project

This project has several dimensions, and its contributions range from supplying practical information to Traditional Owners to help inform future cultural heritage
management decisions, to providing insight into a region of north Queensland which has had minimal archaeological and ethnographic investigation.

The key research aims of this PhD project are (a) to catalogue and survey the rock art of new sites in the limestone belt; (b) to update previous studies; (c) to conduct a comparative study of the Chillagoe motifs with other rock art catalogues of surrounding areas of Queensland; (d) to investigate, through consultation with local Aboriginal groups, the traditional knowledge of cultural practices in the Chillagoe district; (e) to examine rock art characteristics on boundary zones; (f) to use the Chillagoe area as a case study to highlight issues of Aboriginal cultural heritage preservation in the current legislative and economic context; and (g) to create, together with the Traditional Owners, a full recording of rock art sites in the region as the foundation of a community-controlled cultural heritage database.

1.3 Theoretical framework and central research questions

Using a model of regionalisation and fissioning, this PhD project examines the rock art of the Chillagoe-Mungana limestone belt in the semi-arid area of north Queensland. The regionalisation model predicts that Aboriginal groups may be visible through stylistic divisions in rock art, which may also correlate with ethnographically-known territories (e.g. David and Chant 1995; David and Cole 1990; David and Lourandos 1998, Morwood 2002). By investigating rock art found in ethnographically-known boundary areas, it may be possible to determine the social networks, trade and territorial boundaries of Aboriginal groups in the region in the late Pleistocene and Holocene.

While Australian rock art research frequently differentiates rock art provinces through stylistic similarity and cultural affiliation (e.g. Franklin 1993; Gunn 2011a and b; McDonald 1999, 2005; Morwood 2002; Morwood and Smith 1994; Veth and McDonald 2002), very few studies have concentrated on boundary areas where different rock art provinces overlap (David 1991; David and Cole 1990; David and Lourandos 1998; Taçon 1994 are exceptions).

The Chillagoe district is ideally positioned to serve as a case study into regionalisation, fissioning and boundary marking between different socio-cultural groups. The Chillagoe-Mungana limestone belt borders the recent traditional territories of three Aboriginal groups, the Wakaman, the Wakara and the Kuku Djungan. Not only does the
limestone belt intersect the territory of these multiple local Aboriginal groups in the late Holocene, but it also acts as the transitional boundary zone between two of the major rock art provinces in Queensland, the junction between the North/Central Queensland Highlands region and Cape York Peninsula. Analysis of temporal and geographical changes in the motifs of the Chillagoe rock art assemblage may provide insight into other junction rock art zones in Australia.

The Chillagoe-Mungana rock art sites are also significant because they comprise a rock art region that has limited cultural heritage protection, with the majority of sites located in areas which are subject to mining and quarrying. Although Aboriginal groups are active in the Chillagoe district, there are no Native Title holders for the region, complicating the coordination of preservation and protection measures for the rock art sites. This project examines the cultural heritage management challenges encountered by local Aboriginal groups under the current Australian legislation.

This project addresses several key research questions relating to the rock art of the Chillagoe-Mungana area and the gaps of archaeological and ethnographic research that exist for the semi-arid interior of north Queensland:

1) What are the stylistic characteristics of the rock art in the Chillagoe-Mungana limestone belt? Do these characteristics relate to existing self-differentiating Aboriginal groups?
2) What insights into the rock art of the recent past (prior to European contact) can the local Aboriginal communities provide in an area that has little ethnographic information?
3) How does the Chillagoe-Mungana area fit into the overall semi-arid regional sequence?

In addition, the rock art of the Chillagoe area may provide insight into regionalisation, fissioning and intersection zones between social groups prior to European contact:

1) How do the rock art results from Chillagoe-Mungana develop the model of regionalisation and fissioning?
2) Are there certain identifiable characteristics for rock art in ethnographically-known boundary areas? How do overlapping rock art zones manifest themselves in rock art motifs?
This project also examines the current cultural heritage protection measures under the Australian legislation for rock art and archaeological sites:

1) How do the cultural heritage protection issues in the Chillagoe area illuminate the challenges facing Aboriginal communities and other heritage managers?

2) Can the Chillagoe-Mungana case study furnish any recommendations for effective cultural heritage management in the modern Australian context?

1.4 The significance of this thesis and its original contribution

This PhD project has both concrete and theoretical outcomes. First, by comprehensively recording the rock art sites found along the Chillagoe limestone belt, this project supplies the Wakaman Traditional Owners with the foundation of a community controlled database which can aid and inform the cultural heritage management of the area. The rock art records produced in this project have a practical application for the Traditional Owners of the region. The results garnered may form the framework of future cultural heritage management plans for the vulnerable cultural landscape that the Chillagoe-Mungana limestone belt embodies (see Figure 1.1).

This PhD research also provides a more detailed, nuanced picture of the social and economic interactions of Aboriginal groups in an area of north Queensland that has been underrepresented in archaeological work. This project yields evidence into the role of the Chillagoe karst in the regional sequence of north-eastern Australia. Underpinning and enhancing this archaeological investigation is the contribution of Aboriginal people. The Wakaman Traditional Owners have partnered and guided the research in this project, providing a continuity of knowledge and insight that has not been expressly available to earlier researchers. The addition of their traditional knowledge to the archaeological results allows for a deeper, more faceted understanding of the past and the ongoing importance of the area, not only in the present, but also to future generations of the Wakaman people. The Chillagoe-Mungana area is an enduring sacred landscape which remains relevant and powerful for Traditional Owners today.

In addition to providing information into the rock art and social dynamics of north Queensland Aboriginal groups, this project has broader applications. The results from
the Chillagoe-Mungana area can be compared with other studies of social group formation and development (e.g. regionalisation, fissioning and the formation of boundary zones) elsewhere in Australia (e.g. David 1991; David and Chant 1995; David and Cole 1990; Lourandos 1983; McNiven 1999; Wright 2011). This project furnishes an example of how social, territorial and linguistic junctions may be visible in the local rock art record. On a larger scale, to the discipline of rock art research Australia-wide, this project may provide insight into the processes of regionalisation by serving as a case study into what happens on the border zones of major rock art provinces. This project explores the zone of interaction of two of the major rock art provinces in north-eastern Australia.

Another dimension of this project is the examination of the cultural heritage protection challenges faced by Aboriginal communities and other stakeholders, especially in regions that have no Native Title. Cultural heritage sites are under increasing pressure from a range of factors, such as urbanisation, development, mining, and vandalism, both in Australia and globally (see Agnew et al. 2015; Australian Government Department of Environment 2014; Schnierer et al. 2011; Taçon 2014a). At present, there is no uniform Federal legislation outlining the protection of cultural heritage with a national strategy. Each Australian State and Territory has adopted various legislative approaches with varying degrees of robustness in terms of Aboriginal community involvement, protection for both tangible and intangible heritage values, and punitive measures. Currently, in Australia, cultural heritage management of vulnerable heritage sites is a complex process, a tricky navigation of patchwork pieces of cultural heritage legislation, a delicate balancing of cultural heritage protection priorities with increasing development and land use pressures. For Indigenous groups who seek to protect actively and maintain the cultural heritage values of their traditional country, this process is increasing challenging. This thesis proposes some measures to support these communities in their quest for effective cultural heritage management.

1.5 Project methodology and thesis plan

In order to achieve these outcomes, this PhD thesis is structured as a systematic examination designed to lead the reader from the deep past, tracing the socio-cultural influences on the Chillagoe region from the Pleistocene to European contact, through to
the present and the modern cultural heritage protection challenges facing the region. This project uses several approaches to achieve its research goals, combining both formal archaeological methods, such as fieldwork, rock art recording and stylistic comparisons, and informed approaches, in the form of Traditional Owner interviews.

The thesis begins by setting the historical, environmental and archaeological context of the PhD research. Chapter 2 details the background information on the Chillagoe region: its geology and climate; the Aboriginal groups in the region prior to European contact; and the impact of Europeans and present day mining and pastoralism on the area. Chapter 3 explores the previous archaeological research in the Chillagoe-Mungana area, highlighting any research gaps. The results of the five excavations, the prior rock art surveys and the direct dating projects are presented.

Chapter 4 introduces the information specific to this investigation. Split into two sections, Chapter 4 first discusses the archaeological theories which underpin this project. The models of information exchange and regionalisation are described. The remaining part of the chapter outlines the methodology employed in fieldwork and the analysis of the data, including an explanation of the rock art motif classification system.

Chapter 5 presents the results from the fieldwork, summarising the findings for the six survey sections: the distribution of the sites, the production techniques, the pigment colours and the motif forms found in each survey sub-division. This chapter is a collation of all the individual site reports which are contained in Appendix 2. Due to the cultural sensitivity of many of the rock art sites and motifs in the Chillagoe karst, the Wakaman Traditional Owners have requested that the specific details of the individual sites are not to be made public. The photographs and comprehensive site records are not to be viewed without permission, therefore, they have been placed in a confidential Appendix. Chapter 5 presents a summarised, generalised version of these site results.

In Chapter 6, the analysis of the Chillagoe – Mungana rock art begins. The chapter commences with a summary of the stylistic characteristics of the entire Chillagoe assemblage. The Traditional Owner perspective of the significance of the region as a ceremonial meeting place for local Aboriginal groups is presented. This Traditional Owner insight forms the framework for the discussion of the archaeological findings. Chapter 6 then explores the aspects of the Chillagoe rock art assemblage which
promoted group cohesion. Certain features of Chillagoe rock art, such as the site types, the use of the dark and twilight zones of caves, the presence of material culture stencils, and the employment of particular motifs as territorial markers, fostered group connection and cultural affiliation. This chapter examines the close socio-cultural ties of the local Aboriginal communities visible in the rock art record on this boundary area.

The Chillagoe – Mungana assemblage, however, also displayed aspects of individual group identity and difference. Chapter 7 opens with a discussion of the rock art stylistic characteristics of the local groups who gathered at the karst. These group stylistic disparities are then compared with the variations found in the Chillagoe assemblage to determine any correlations with known territorial boundaries, to see whether the distinct cultural local identities are reflected in the rock art. This chapter focuses on the cultural differentiations found along the karst border area.

Chapter 8 broadens the scope of the discussion to place the Chillagoe rock art assemblage into the wider semi-arid socio-cultural regional context. Through comparisons with the large rock art provinces to the north and south of the Chillagoe – Mungana area, the changes in the Chillagoe assemblage are traced through time. Chapter 8 tells the story of the Chillagoe karst, the ebb and flow of regionalisation forces across the limestone belt from the late Pleistocene to the modern period. Chapter 8 examines the extent to which the Chillagoe case study develops the model of regionalisation.

Chapter 9 turns to the present day cultural heritage management issues. Using the Chillagoe-Mungana area as a starting point, Chapter 9 probes the challenges facing Aboriginal communities in the current legislative and economic context, not only in Queensland, but elsewhere across Australia. Chapter 9 concludes with a list of recommendations for improving the cultural heritage management of rock art and other heritage sites.

Chapter 10 closes this thesis, revisiting the research questions, summarising the findings, and focusing on the prospects for future research.

This thesis hopes to aid in the understanding of this significant region in north Queensland. By furnishing insight into the past of the Chillagoe-Mungana cultural
landscape, this PhD project, together with the Traditional Owners, seeks to support the limestone belt’s future protection.
Chapter 2 Setting the Context: The Chillagoe Region

2.1 Introduction

Before examining the specifics of the rock art of the Chillagoe-Mungana limestone belt, it is important to understand the geographic and historical context of the region. This chapter provides an overview of the various influences on the production and preservation of rock art in the district, both before and after European contact. Some topics outlined in this chapter will be revisited in more detail in subsequent sections; however, this chapter serves as a general introduction to the Chillagoe area.

2.2 Geology

The Chillagoe region, approximately 170 kilometres west of Cairns, Queensland, is typified by a series of discontinuous limestone karst tower formations that stretch from the Walsh River in the north to Almaden in the south, (David 1996a; see Figures 2.1-2.4). The limestone belt comprises part of a larger chain that also includes the Mitchell-Palmer limestone belt further to the north. The limestone was deposited during the Upper Silurian and Lower Devonian period (c. 400 million years ago) as part of a shallow reef system (David 1992b; Godwin 1991; Plimer 1997). Massive movements of the earth’s crust then compressed these formations and pushed them above the sea level as a folded mountain range (Godwin 1991: 1; Plimer 1997). Erosion, geological processes and exposure to rainwater then reshaped the formation, extending the cave systems, until the end of the Cretaceous period (c. 140 million years ago) when the limestone was again pushed below sea level, this time by the Carpentaria basin, and covered with shale and sandstone sediments (Godwin 1991; Plimer 1997). These covering sediments were in turn eroded and, through a process of gradual uplift, the Chillagoe formation attained its present position. A slow process of weathering produced a range of copper minerals, tin, native silver and gold, as well as world class specimens of azurite, malachite, cuprite, in addition to limestone and marble (Plimer 1997). These mineral resources attracted mining and prospecting interest from early in Queensland’s history and spurred the push by Europeans to settle the Chillagoe area.

Today, the limestone outcrops, known as ‘towers,’ rise out of semi-arid plains, often containing deep caves and smaller rockshelters, many of which are suitable for human
habitation. The towers can be 100 m high, easily visible from the surrounding plains area, a natural, eye-catching feature in the landscape (Figures 2.2, 2.4, and 2.6). The karst towers vary in size from small, freestanding outcrops to formations several kilometres in length. The larger towers often encompass numerous caves and shelters, ranging from small overhangs to complex cave systems that stretch up to several kilometres in a series of elaborate underground passages. Many of the chambers exhibit phreatic development, with multiple levels and false floors.

![Figure 2.1 Chillagoe, north Queensland](image)

*Figure 2.1 Chillagoe, north Queensland*

![Figure 2.2 Limestone karst](image)

*Figure 2.2 Limestone karst*
Figure 2.3 Chillagoe-Mungana limestone belt (in red), rivers and other geographic locations of north Queensland mentioned in the text

Figure 2.4 Location of the limestone belt (red circle)
2.3 Climate, water resources and land units

Although Chillagoe is located inland and west of the Great Dividing Range, the region’s climate demonstrates a distinct wet and dry cycle. The months of November to May are the wettest with as much as 850 mm of annual rainfall falling within that time period (Mardaga-Campbell 1995; Robinson 1982). The remainder of the year is quite dry, and the temperature ranges from 40°Celsius in the summer to a low of 5°C in the winter.

Despite the semi-arid conditions, there are a number of permanent and semi-permanent waterholes in the region (David 1996a; Lamb 1996; Mardaga-Campbell 1995). The Walsh River, Chillagoe Creek, Muldiva Creek and Quaker Creek hold varying amounts of water, with Chillagoe Creek and the Walsh being perennial except in extreme drought (Birkett 1985). There are also several springs in the district which were utilised by the Aboriginal population. Several of the karst formations, scattered throughout the limestone belt, hold standing, permanent water usually in a chamber below the level of the surrounding plains. At least seven caves are known to contain water. In addition to permanent pools, many of the towers release water over a period of months, through a gradual drying process, with water dripping into crevices in the limestone and forming either cave rimstone pools or drip zones (Birkett 1985; Jennings 1982; see Figure 2.5).

Birkett (1985: 137) also identifies a number of water-producing plants and trees that may have been exploited, if necessary, concluding that there were an adequate number of water sources within a two hour travel radius of the limestone belt to support a local population, except in years of extreme weather variation.

A number of distinct ecological zones surround the limestone belt, each with differing vegetation and faunal resources: the plains, the hills, the rivers/creeks, and the limestone towers. The plains comprise open eucalypt woodland, and a mixture softwood and hardwood tree species inhabit the hill and the creek/river zones. The limestone karst towers are often surrounded by microphyll vine thickets, a type of dry rainforest (Birkett 1985; David 1982b; Godwin 1991; see Figures 2.6, 2.7). Birkett (1985: 142) identifies at least 80 plants species that could have been “useful” to Aboriginal occupants of the limestone belt either for food or medicinal purposes. David (1996a) recorded 17 edible plant species growing on the plains; 24 edible species present on the hills; 15 edible species located along the rivers; and over 70 edible types of plants, seeds
and flowers growing on the limestone towers themselves. The microphyll vine thickets contain many seeds, fruits, bulbs and tubers, creating a microenvironment rich in food resources as compared to the surrounding plains (David 1996a; Mardaga-Campbell 1995).

In addition to flora resources, the limestone belt also supports a number of faunal species. Macropods and birds predominate, but smaller animals are represented as well (Mardaga-Campbell 1995). Excavations of Walkunder Arch Cave yielded remains of bandicoots, echidnas and possums (Mardaga-Campbell 1995). The riverine zone near the limestone karst towers also contains a range of species of amphibians, reptiles, freshwater fish, mussel, and other food sources, providing a diverse source of plants and animals for exploitation by hunter-gatherers of the area (Campbell and Mardaga-Campbell 1990; Mardaga-Campbell 1995). These types of wild foods would have been an important resource for the Aboriginal people of the region, and, coupled with reliable water sources, would have provided support for habitation in the area.
Figure 2.6 Limestone tower karst, Chillagoe, north Queensland

Figure 2.7 Microphyll vine thickets
2.4 Aboriginal people

2.4.1 Territory

Prior to this project, there had been limited ethnographic investigation into Aboriginal groups of the semi-arid interior adjacent to the limestone belt. Unlike other areas of north Queensland, little direct ethnographic work has been conducted in the Chillagoe area. While McConnel (1934, 1939, 1940) concentrated her study in areas of Cape York, and Roth (1901, 1903, 1904) extensively detailed many Aboriginal people and their practices in other Queensland areas, the Chillagoe region was not specifically addressed. Surrounding regional areas of Queensland are much better known and understood, having been studied extensively by anthropologists and archaeologists, as well as often having the original Indigenous population still present on their country. Chillagoe, until recently, has existed in an ethnographic vacuum. The lack of ethnographic work is significant, since much information specific to the Aboriginal communities of the Chillagoe area was never recorded, and coupled with the early removal of many of the local population from their lands, much of the background knowledge of the groups of the Chillagoe area remained unknown. Many previous researchers in the region did not have access to traditional knowledge associated with the Chillagoe-Mungana limestone belt; however, recently, the Wakaman Traditional Owners have begun to share their cultural knowledge of the region.

Tindale (1974) identifies three groups of Aboriginal people who were present in the Chillagoe region at the time of European contact. While the exact boundaries of the groups are difficult to determine, the Kuku Djungan, Wakaman, Wakara (Wakoorra) people all seemed to share the limestone region as a boundary of their separate areas (Mardaga-Campbell 1995; Tindale 1974; see Figures 2.3, 2.8, and 2.9). Mardaga-Campbell (1995: 83), through further personal communication with the descendants of some of these groups, was able to approximate their territorial range:

The territory of the Djangan (or Kuku Djangan as the people themselves actually say) is located to the north-east of Chillagoe, across the Walsh River towards Mount Mulligan, east to Dimbulah and west to Mungana… The territory of the Wagaman ran south from Chillagoe and Mungana to the Tate and Lynd Rivers, and reached the vicinity of Mount Surprise… The Wakoorra people were located north in the area from Mungana to the Mitchell River, east to Mount Carbine and west to Wrotham Park.
Rodney Chong (pers. comm. 2013), senior Traditional Owner of the Wakaman people, also places the Wakaman traditional territory to the west and south of the limestone belt, stretching southwest to the Tate and Lynd Rivers which comprise the heart of the Wakaman traditional estate. The Kuku-Djungan, while acknowledging that the Chillagoe-Mungana limestone belt comprises the western border of their traditional lands, currently hold Native Title over the area around Ngarabullgan (Mount Mulligan) to the east of the Chillagoe-Mungana limestone belt, and their traditional activities are centred at multiple sites there. At present, there appear to be no descendants identifying themselves as the Wakoora/Wakara group, possibly a result of European influence of the area (see section 2.5 European Influence). Currently, no Aboriginal people hold Native Title over the limestone belt. A series of Native Title claims were lodged and subsequently dismissed. The result of these failed claims is that currently no group, under Queensland legislation, is the recognised Native Title holders over the area surrounding the Chillagoe-Mungana limestone belt, a situation that profoundly impacts the cultural heritage management of the region.

The Chillagoe-Mungana limestone belt, according to senior Wakaman elder Mr. Rodney Chong (pers. comm. 2013), served as the shared boundary and ceremonial ground for the different groups in the region. The Aboriginal name for Chillagoe is “woorthanka,” a Wakaman or Kuku Djungan word for “meeting place.” Mrs. Jessie Chong, a Wakaman woman and the mother of Mr. Rodney Chong, told her descendants that Chillagoe served as a meeting area for the local Aboriginal groups who travelled there for ceremonies, dancing and trading before returning to their respective traditional estates (Carol Chong, Wakaman Traditional Owner and Cultural Liaison, pers. comm. 2014). The Chillagoe limestone belt is significant because of its geographic positioning between groups who had access to the resource rich eastern coastal fringe, such as Bar-Barrum and Kuku Djungan, through their cultural and trade links, and groups who were more linked to the semi-arid of the interior of Queensland, such as Wakaman and Ewamian (see Figure 2.9). These social and economic overlaps and their influence on the stylistic characteristics of the rock art of the limestone belt are examined in Chapters 7 and 8.
Figure 2.8 Map of the Aboriginal groups in the Chillagoe-Mungana area by Tindale (1974: 87). Tindale (1974) places Mungana on the border between the Wakaman (“Wakamn”), Wakara and Kuku Djungan (“Djankn”)
2.4.2 Language

Research into the linguistics of the Aboriginal groups surrounding the Chillagoe-Mungana limestone belt was initially impeded by the lack of Wakaman speakers identified when the first studies were conducted. At first, Dixon (1966, 1976: 215, 2011) identified the Kuku Djungan and Wakaman (as well as the Kuku-Yalanji and Muluridji who are located further to the northeast of the Chillagoe area) as all speaking variations of Kugu-Yalanji language; however, it was later determined that the Aboriginal consultants used those primary linguistic recordings were possibly misidentified Wakaman speakers. In those same initial studies, Dixon (1966) also states, in seeming contradiction, that the Wakaman language was most linguistically similar to the Ewamian language (which Dixon calls “Agwamin”) spoken by the Ewamian people whose territory lies adjacent to the Wakaman on the southwest, covering the area near Forsayth, Einasleigh and Georgetown. Dixon (1966) states that the Wakaman and Ewamian have almost identical languages, although the speakers themselves can distinguish between the two. Further unpublished linguistic work on the Wakaman language for the Wakaman Native Title connection reports clarifies that the language spoken by the Wakaman is definitely distinct from the Kuku Yalanji dialects, and it is linked most closely with Ewamian speakers. This shared language reflects the
Wakaman and Ewamian strong connections, with the Wakaman having the closest cultural and traditional links to the Ewamian people of all the groups of the Chillagoe region, sharing moieties as well as language (Rodney Chong pers. comm. 2013). These strong socio-cultural ties between the Wakaman and Ewamian, and how they are manifested in the rock art motifs of the region, are discussed in Chapter 8. Today, the Wakaman language is critically endangered, spoken by only a few Wakaman members.

What is significant about the linguistic boundaries is that the limestone karst and the nearby Walsh River appear to form the border between not only for the geographical territories of the local groups of Wakaman, Wakara and Kuku Djungan in the period before contact as described above but also the karst serves as the boundary between two, and possibly even three, of the major language families of north Queensland. The Kuku Djungan people, to the northeast of the Chillagoe formation and the Walsh River, speak a dialect of the Kuku Yalanji language, and they have cultural ties with the other nearby Yalanji speakers, such as the Muluridji and Kuku Yalanji people, cultural and linguistic connections which are fundamentally distinct from the Wakaman people. Also, interestingly, the Wakaman territory is bordered on the southeast by the Bar - Barrum people who speak MBarbaram, a language that is linguistically distinct in Australia, spoken in a bounded territory with no clear connections with surrounding linguistic groups (Dixon and Blake 1991). These three separate language groups all come together in the area of the limestone belt, overlapping with the karst towers and the Walsh River serving as boundary markers and buffer zones. These larger language families (Agwamin, Kuku Yalanji and Mbarabam) all represent broad socio-cultural networks that span vast distances and diverse ecological zones in Queensland, stretching from the central, more arid interior of Queensland (the Agwamin language groups – Ewamian and Wakaman), north to southern Cape York (the Kuku Yalanji groups – e.g. Kuku Djungan), and east to the Wet Tropics area on the east coast (Mbarabam). The large linguistic territories all meet in the Chillagoe-Mungana limestone area, coming together in the region of the limestone towers (see Figure 2.10). The Chillagoe-Mungana formation represents the overlapping spheres of groups with different cultural and rock art traditions, different creation beings, and disparate linguistic ties. The shared area around the limestone karst is a significant boundary area in the northeast of Queensland. The Chillagoe-Mungana region encompasses merging
interaction spheres of diverse groups, both at a local level, in terms of the individual
groups that surrounded and potentially used the area, e.g. the Wakaman, the Kuku
Djungan and the Wakara, but also, on the larger regional scale, in terms of the junction
between major language families and their corresponding broad socio-cultural networks.
How this intersection manifests itself and whether it is visible in the rock art motifs
found along the limestone belt is the one of the key questions addressed in this thesis.

Figure 2.10 Boundary of three major north Queensland language families at the Chillagoe-Mungana
limestone belt region (after AIATSIS and Auslig/Sinclair, Knight, Merz 1996)

2.4.3 Occupation at Chillagoe before European contact

While the comprehensive results of previous archaeological and rock art research are
outlined in Chapter 3, the following section is a brief summary of Aboriginal
occupation and site use in the limestone belt prior to European contact.

To date, there have been five archaeological excavations undertaken at cave and
rockshelter sites in the karst towers: at Wullumba, Pillar Cave, the Walkunders, Fern
Cave and Echidna’s Rest (see Chapter 3). The findings from these excavations
demonstrate that the Chillagoe-Mungana limestone belt was utilised by Aboriginal
people from the Pleistocene to the modern period. In Fern Cave, for example,
occupation began as early as 29,000 years ago (David 1990b, 1991, 1996a). The
archaeological evidence shows that the Chillagoe-Mungana limestone belt was
frequented by groups up until the time of European contact. The Wakaman Traditional
Owners corroborate this archaeological evidence and state that the limestone belt area was utilised for meetings and ceremony until the arrival of Europeans disrupted traditional activities, although the traditional knowledge of the stories and cultural and activities associated with the area was maintained and passed to the Wakaman descendants (Rodney Chong pers. comm. 2014; Carol Chong pers. comm. 2014). The arrival of Europeans, however, dramatically impacted the local Aboriginal populations.

2.5 European influence in the Chillagoe area

2.5.1 Explorers

The Chillagoe-Mungana region was one of the first parts of north Queensland to be explored and settled, as it was identified early by Europeans as having mining and pastoral potential. Edmund Kennedy in 1848 was the earliest recorded European to visit the area, and while his diaries have been lost, William Carron, a member of his expedition, detailed the account of their travels along the Walsh River and passing encounters with hostile Aboriginal groups as they travelled north towards Cape York (Pike 1988: 36). The next expedition to skirt the Chillagoe region and encounter difficulties was the expedition led by Frank and Alec Jardine in 1863; they were attacked by a large number of Aboriginal warriors while exploring the Mitchell River to the north and west of Chillagoe on their journey to the tip of Cape York (Pike 1988: 155).

In 1872, William Hann set out to assess the mining and pastoral potential of the region for the Queensland government, an expedition that would take him through Wakaman territory and the Chillagoe-Mungana area. After crossing the Tate River, the heart of the Wakaman traditional estate, Hann encountered signs of Aboriginal people on a daily basis, and he observed that the area held a seemingly large population. Hann described bark huts and numerous Aboriginal camps on the Walsh River, though sightings of people were rare (Pike 1988: 246). Hann discovered gold on the Palmer River, and the release of the report of his expedition in 1873 caused great interest and the push to open up the north began. James Venture Mulligan, in 1873, followed Hann’s track to the Palmer River, clashing with Aboriginal groups and returning with 102 ounces of gold.
The Palmer Gold rush was now in full swing, and large numbers of Europeans and Chinese flowed into the region.

2.5.2 Mining and pastoralism

Europeans were not only intent on the area’s mineral wealth, but the Chillagoe-Mungana region was also recognised for its pastoral prospects. The initial pastoral station was founded by William Atherton in 1887. Copper and tin were subsequently found on the station, and mining began in earnest in the late 1880s. John Moffat established mines at Chillagoe and Mungana, and a railway was constructed to transport the ore to Mareeba to the east (and closer to the coast). The Chillagoe smelter was finished in 1901 (Dempsey 1980; Kerr 2000). During the height of mining production, the European population swelled with over 1000 mine workers living in the area (Kerr 1986: 12). By 1910, the district had 10 hotels, a post office, a police station, a school, a hospital, two newspapers, several shops and an estimated population of 2000 people (Dempsey 1980: 130; Kerr 1986: 12). There were numerous small mines dotted around the region, such as Zillmanton, Redcap, Girofla, and Lady Jane, each with small associated settlements and smelters (Kerr 1986; Toohey 2001). The two major townships at Chillagoe and Mungana flourished for several decades until the mines were closed. Mungana, in particular, had a reputation as being rough and rowdy (Dempsey 1980; Kerr 2000).

The Mungana mines were initially productive, producing, in 1,908,5000 tonnes of lead and 15,600,000 gm of silver (Dempsey 1980: 131). However, the mining companies in the area subsequently came into financial difficulty, and the Queensland Government bought into the mining operations. In 1930, allegations of corruption surfaced in the ‘Mungana Affair’ which implicated two Queensland Premiers, Ted Theodore and Bill McCormack, who were accused of having financial interests in the State owned operations (Dempsey 1980; Kennedy 1978). The Chillagoe and Mungana mines struggled after the scandal, and, in 1943, the Chillagoe smelters were closed and were finally dismantled in 1952 (Kerr 1986). The township at Mungana was subsequently abandoned. In 1959, in Mungana, there remained only a hotel, one store, a post office and 7 residents. At present, Mungana boasts only the remains of buildings, and the current population of Chillagoe is about 200 residents (see Figure 2.11).
After the smelters were closed, there was a period of large scale mining inactivity until 1984, when mining returned to the area, with the establishment of the Red Dome Mine (later known as Kagara or Mungana Goldmines). The Red Dome Mine, a large open cut gold mine, is located in the Mungana section of this project’s survey area (see Figure 2.12). Kagara LTD is currently non-operational and in liquidation. Mungana Goldmines, however, acquired the Chillagoe assets in August 2014 from Kagara LTD, with a view to developing the King Vol zinc deposit in the short term, located approximately 25 kilometres north of Chillagoe on the northern side the Walsh River (not in the limestone karst zone). Associated with the King Vol deposit is a partially completed base metals concentrator plant that Mungana Goldmines is planning to make fully operational to process the results from their local holdings. In addition to the development of the King Vol zinc, Mungana Goldmines will also explore the potential for additional polymetallic deposits that lie within their mining leases, such as at Red Cap, Griffiths Hill and Penzance (Mungana Goldmines 2014). These mining leases and potential deposits are adjacent to or within the karst towers of the Chillagoe formation. The company is also considering a long term view to reopening the Red Dome open cut mine for copper and eventually gold (Mungana Goldmines 2014).
Mungana Goldmines’ acquisition of the Chillagoe assets will see a return of large scale mining to the Chillagoe-Mungana area, bringing with it the additional pressures of increased infrastructure and potential for disturbance to the cultural heritage sites located in the limestone belt. Kagara LTD, when it was previously operational, engaged with Traditional Owners and developed a Cultural Heritage Management Plan for the mining lease surrounding the Red Dome Mine. In August 2012, Environmental Impact Statement (EIS) Terms of Reference were released for Mungana Goldmines’ proposed redevelopment and reopening of the defunct Red Dome Mine (Queensland Government Department of Environment and Heritage Protection 2012). The EIS recommended a Cultural Heritage Management Plan be developed for the expansion project, and Mungana Goldmines proposed to undertake any new Cultural Heritage Management Plan with the identified endorsed Traditional Owner parties (Mungana Goldmines 2012). As of February 2016, since the full acquisition of the Chillagoe assets, no information has yet been released about any possible EIS or Cultural Heritage Management Plan being developed for the future works in the region, although the company released information in July 2015 stating the intent to bring the project into
production by late 2016 (Mungana Goldmines 2015). The company has also entered into an exploration partnership with Newcrest Mines, whereby Newcrest will explore for large gold-copper porphyry deposits on portions of Mungana Goldmines’ tenements spending $20 million over eight years. This exploration partnership entails 8000m of diamond core drilling, commencing in August 2015 (Mungana Goldmines 2015). Since many of the future mining developments may impact cultural heritage and rock art sites located in the limestone belt, it is hoped that these potential impacts will be adequately addressed by the company. The return of large scale mining to the area will increase pressure on the natural and cultural heritage values of the region. A further discussion of the challenges to the cultural heritage management of the area is addressed in Chapter 9.

In addition to these larger scale mining projects, there are also a handful of small marble and lime quarrying leases scattered throughout the Chillagoe-Mungana limestone belt which are held by local companies such as Australian Fine Grain Marble, Cairns Marble and Mirriwinni Lime. The majority of the limestone karst towers that are not encompassed within the National Park boundaries are subject to mining and quarrying leases, and the remaining few towers lie within pastoral leases, a situation that has consequences for cultural heritage protection of the area (see Figure 2.13).

Figure 2.13 Granted mining leases (in red) and National Park boundaries (in green). (Queensland Government Mines Online 2015)
2.5.3 Impact on Aboriginal communities

The initial introduction of mining and pastoral activities in the region and the influx of large numbers of European and Chinese had lasting impact on the Aboriginal population of the region, displacing many of the local Aboriginal people from their traditional estates. The Queensland frontier was the scene of some of the bloodiest and most intense conflict between settlers and Aboriginal people, a consequence of the large geographic territory that supported numerous Aboriginal groups, the multiple natural resources that were of interest to European settlers, and the fact that the political control of the area rested with the colonists themselves (Barker 2007; Reynolds 2013). The use of the Native Police had a devastating effect on local Aboriginal populations. The Native Police were recruited from non-local Aboriginal groups and were employed to use their traditional skills and superior weapons and marksmanship for the “dispersal” of local groups (Kerr 2000; Loos 1982; Reynolds 2013: 130). While the majority of mass killings of Aboriginal people were unreported in north Queensland, one incident at Irvinebank (approximately 100kms from Chillagoe) exemplifies what occurred throughout the region in this period. In October 1884, the Native Police killed four Aboriginal people (two women, one man and a child) who were camping, reportedly without incident, near the small mining township (Genever et al. 2006; Kerr 2000; Loos 1982; Pike 1988). While this particular incident is known, the majority of massacres remain undocumented. The Wakaman people, Traditional Owners of the Chillagoe-Mungana area, were a casualty of this frontier violence.

The introduction of Europeans had a devastating effect on the Wakaman people, with the majority of the Wakaman population killed at Duffy’s Creek waterhole near the Tate River in the late 1800s (Rodney Chong pers. comm. 2013). Only few members of the Wakaman survived, including Mick McTavish (born 1869 on Bolwarra Station) who escaped by hiding in a tree (Rodney Chong pers. comm. 2013). At present, there are only a handful of families, such as the Chongs and the Fulfords, who can trace their lineage back to the original Wakaman group (Rodney Chong pers. comm. 2013).

As elsewhere in Australia, much of the Indigenous population came to live on the fringes of the mining and pastoral settlements, or to be employed as labourers and domestic servants. In 1889, William Atherton, owner of Chillagoe Station, applied for help for rations for approximately 200 Aboriginal people who were living on the
station. His request was denied (Loos 1982). Some of the Aboriginal population was also removed and sent to missions elsewhere in the region, such as Palm Island, where some of the Wakaman descendants still reside. Their traditional ties with the area have been compromised, but the Chong family were able to escape governmental influence and remain on country, maintaining their ties and traditional knowledge (Rodney Chong pers. comm. 2013; Carol Chong pers. comm. 2014).

2.6 Cave tourism and National Parks

The Chillagoe-Mungana district boasts more than just mining and pastoralism. Since European settlement, the limestone caves themselves have attracted numerous visitors, with records showing that tourists have travelled to the area since the early 1900s (Kerr 1986). In 1940, the Queensland Government gazetted nine sections of the limestone belt as National Park, totalling 1875 hectares. The largest of the nine initial parcels was the Royal Arch section, southwest of the Chillagoe township, encompassing 1514 hectares. Multiple smaller sections, some as small as a hectare, were also created, such as Eclipse Tower, Markham and Royal Archway. Cave tours officially began in the 1960s, initially run by Vince Kinnear, a Forestry Department employee. National Park infrastructure was developed with the creation of walking tracks, fencing, boardwalks and signage. Additional sections of the limestone belt were subsequently included in the Chillagoe-Mungana National Park, such as the Ramparts. Multiple caves both within and outside the National Park have been mapped, and over 560 cave entrances have been tagged. The rockshelters around the base of the towers, however, generally have not been included in these cave mapping and tagging activities. Presently, there are Ranger guided tours into three of the cave systems, with other caves open to self-guided access (see Figure 2.14).

In September 2014, the Chillagoe-Mungana National Park received a $700,000 grant from the Queensland Government to upgrade the visitor infrastructure in the park, with money going to improving the lighting system in Donna Cave and the walkways in Trezkinn Cave, two caves open for public access which do not contain rock art. Funds will also be allocated to developing visitor facilities at the historic Chillagoe smelters site located next to the township. No additional funds were earmarked for sites in the park that have Aboriginal cultural value. The emphasis of the National Park is on the
geological features of the cave systems, rather than their cultural values, and the area is promoted as a tourist destination because of the limestone caves, with less acknowledgement of its Aboriginal cultural heritage significance. Several tour companies conduct day trips to the area, and Chillagoe has numerous accommodation options for tourists.

There are three main sections to the National Park: the Ramparts, Royal Arch, and Mungana/the Archways. Some rock art sites included in this thesis lie within the National Park boundaries, and two sites, Wullumba and the Mungana art site, are open to the public. Even sites that lie within the protection of the National Park have experienced damage, with graffiti having to be removed several times at the Mungana art site, both in 1991 and again in 2003, with the 2003 incident causing significant damage to the main panel of rock art (Horsfall 1991; Queensland Government Heritage Council 2003). Many more sites, however, are found in the limestone tower formations outside of the current park boundaries. These sites have limited protection, and several
have been damaged by graffiti and mining/quarrying activities. The protection issues of the rock art and other cultural heritage sites are examined in Chapter 9.

2.7 Conclusion

This chapter outlined the environmental and historical background of the Chillagoe-Mungana region, illustrating the complex socio-cultural context of the Aboriginal groups who inhabited the area prior to European contact, as well as detailing the range of influences on the preservation of the rock art sites in the modern period. The next chapter provides further contextual information for this project through the discussion of the previous archaeological research undertaken in the Chillagoe limestone belt.
Chapter 3 Previous Archaeological Research in the Chillagoe Region

3.1 Introduction

Research activity has occurred in the Chillagoe-Mungana area for more than four decades, especially during the 1980s and early 1990s, but only limited work, all at already documented or excavated sites, has been performed in the past 20 or so years. Much of the previous archaeological study, however, was not systematic or geographically widespread, with multiple projects concentrated at the same cave or rock shelter, while the remaining karst towers received little or no research activity. This targeted work, the majority of which was done several decades ago, coupled with the remoteness of the region and limited Traditional Owner consultation, has meant that the overall archaeological understanding about the limestone belt remained patchy.

These prior research projects, however, are key foundational studies, providing valuable contextual information for the occupation and rock art production in Chillagoe region. This investigation extends and enhances this earlier work in order to build a more nuanced conception of north Queensland prior to European contact.

This chapter focuses on the various archaeological and rock art research undertaken in the Chillagoe karst formation prior to this PhD project, including the excavations, the rock art surveys, and the direct dating projects. The relevant archaeological information pertaining to surrounding areas is presented in Chapters 7 and 8.

3.2 Excavation results

To date, five caves and rockshelters have been excavated in the region (Wullumba, Fern Cave, Echidna’s Rest, Pillar Cave, and Walkunder Arch), but only three of these sites, Fern Cave, Echidna’s Rest and Walkunder Arch, have been extensively documented. The two smaller excavations, Wullumba and Pillar Cave, furnished few reportable results (Mardaga-Campbell 1986; Wright 1971b). Evidence from the three main excavations, however, suggests that occupation in the Chillagoe district began in the Pleistocene and continued to the late Holocene, though there were variations of site use and occupation frequency (David 1990a, 1991; Campbell and Mardaga-Campbell 1993;
Mardaga-Campbell 1995). All five shelters contain rock art (the probable cause for their selection for excavation).

### 3.3 Wullumba

The earliest archaeological work at Chillagoe occurred when Richard Wright (1971b) sank a small test pit at what is now known as the Wullumba rock art site (although he does not reference the location). Unfortunately, Wright’s excavation report consisted of a few brief sentences, and his work yielded only a few bones, shells, and stone tools, and no charcoal (Wright 1971b). With little to interest him, Wright abandoned the area to focus on more promising (in his view) sites in Cape York. No further excavation work has been carried out at Wullumba, although its deep deposit and numerous rock art motifs would make it an excellent candidate for future research. The site, located in the National Park, is one of two rock art sites currently open to the public. Its deposit and surface are somewhat protected by a boardwalk and fencing, although the rock art panels have experienced vandalism and graffiti in the past (Horsfall 1991; Figure 3.1).

![Figure 3.1 Wullumba](image)

### 3.4 Pillar Cave

After Wright (1971b), archaeological work in Chillagoe ceased until John Campbell and Mireille Mardaga-Campbell began work in the early 1980s and Bruno David in 1983. Campbell (1982, 1984) and Mardaga-Campbell (1986) excavated two sites in the
Chillagoe limestone belt, Pillar Cave and Walkunder Arch, initially focusing on the Pleistocene deposits.

Mardaga-Campbell (1986) published preliminary results from Pillar Cave, a large open cave located at the south-eastern end of the Chillagoe karst formation. Unlike the majority of sites in the Chillagoe-Mungana area which are found in limestone karst towers, Pillar Cave is composed of conglomerate, but like the nearby limestone formations, it developed a similar micro-environment, rich in food and plant sources (Mardaga-Campbell 1986; Figure 3.2). Three preliminary radiocarbon dates were acquired from charcoal fragments excavated, all of late Holocene origin: 830 ± 60 BP; 1290 ± 60 BP and 1940 ± 60 BP (Mardaga-Campbell 1986: 55). While no Pleistocene dates were obtained because of the limited amount of charcoal found in the lowest excavation units, Mardaga-Campbell (1986: 56) described similarities between the deepest deposits of Pillar Cave and the upper most Pleistocene levels excavated in nearby Walkunder Arch in terms of the “structure of the deposits themselves and the large number of land snail shells,” suggesting possible chronological links. Pillar Cave also contains several panels of rock art, but these were not incorporated into Mardaga-Campbell’s excavation research (see Appendix 2 for a motif catalogue).

Figure 3.2 Pillar Cave excavation site
3.5 Walkunder Arch

After the excavation of Pillar cave, research attention turned to the south-western end of the limestone belt, to the Walkunder Arch complex, a cluster of caves and shelters containing both rock art and occupation evidence. Campbell and Mardaga-Campbell excavated Walkunder Arch periodically for almost 15 years, allowing for significant care to be taken during the excavation process. Campbell (1982) excavated the Pleistocene deposits of Walkunder Arch initially, and Mardaga-Campbell (1995) later examined the Holocene layers using the living-floor research methods, where large horizontal layers of a site are excavated and examined using three dimensional recording techniques (often employed in Europe) to document precisely the finely laminated stratigraphy of the deposit. The painstaking excavation and the excellent preservation context of the deposit meant that even the impression of grass mats, possibly used for sleeping, were still visible (Campbell and Mardaga-Campbell 1993; Mardaga-Campbell 1995 and Mireille Mardaga-Campbell pers. comm. 2014). Several distinct fireplaces, small clusters of knapping locations, as well evidence of seeds from edible fruits and freshwater mussel shells, were also evident (Mardaga-Campbell 1995: 391; Figure 3.3).

The results of the various excavations at Walkunder Arch determined that occupation events were sporadic, beginning in the late Pleistocene (19,500 to 11,000 BP). A gap in occupational activities occurred in the early Holocene (7000 to 9500 BP), but then occupation resumed and continued to at least 900 BP (Campbell 1982, 1984; Campbell and Mardaga-Campbell 1993; Mardaga-Campbell 1995). Due to the fine grained analysis of the deposit, Campbell and Mardaga-Campbell determined that this occupation pattern, however, did not follow a typical wet/dry yearly cycle, but rather that occupation at the shelter was episodic, with use, probably by small groups of people, followed by long intervals of seeming abandonment (Campbell and Mardaga-Campbell 1993; Mardaga-Campbell 1995).

Based on the archaeological evidence, Mardaga-Campbell (1995) proposed two different scenarios to explain the ephemeral nature of this habitation pattern. The first scenario entailed that the shelter may have been occupied by a limited number of people, such as a small family group, who visited the area periodically, having
dispersed from larger wet season gatherings held elsewhere in their traditional territories. These small groups came to the limestone karst during the dry season to forage for a short time, on the fringes of their usual routes, before returning to more heavily utilised sections of their traditional estate (Mardaga-Campbell 1995).

Mardaga-Campbell (1995) also proposed an alternative explanation, whereby people from neighbouring local groups, such as the Wakaman, the Kuku Djungan and the Wakara in the recent past, may have gathered together for large ceremonial activities that occurred only after long intervals, perhaps constrained and motivated by environmental conditions (e.g. droughts) or social factors, such as having the requisite numbers of adolescents for initiation activities. During these inter-group meetings, the main gatherings of people were located in open camps either on the plains in front of the towers or along the nearby rivers and watercourses. Splinter smaller groups may have then come to the Walkunder Arch Cave to perform ritual activities which were attended
only by small numbers. These ceremonies may have included rock art production and short term, ephemeral use of the shelter (Mardaga-Campbell 1995).

The direct dating of rock art motifs in the Walkunder complex (see section 3.17) corroborates that the site may have only had sporadic use and that some visitation may have been related to ceremonial rather than subsistence activities. When the occupation sequence was correlated with the results of several rock art direct dating projects, using laser AMS dating of the gypsum oxalate crust over several motifs, it was found that painting often occurred in these seeming occupational gaps, particularly in the early Holocene gap of 7000 to 9500 years ago, suggesting that the site was not abandoned, but instead was visited briefly for the production of rock art (Campbell and Mardaga-Campbell 1993). Campbell and Mardaga-Campbell (1993) concluded that the site was probably used continuously, if intermittently, from the Pleistocene until approximately 900 years ago, with the traditional and ceremonial significance of the area possibly being a determining factor in the cyclical nature of the occupation pattern, since the creation of rock art was not necessarily tied to habitation of the site.

3.6 Fern Cave

While Campbell and Mardaga-Campbell were researching the southern section of the Chillagoe formation, David (1996a) began surveying the flora and the open sites adjacent to the karst towers, as well as conducting excavations at Fern Cave (David 1991) and Echidna’s Rest (David 1990a), two caves located in the central section of the limestone belt.

In Fern Cave, David (1990b, 1991) determined that habitation at the site began at 29,000 BP, with occupation activities peaking during the Last Glacial Maximum (22,000 to 17,000 BP) and gradually tapering off in the Holocene. The increased ochre deposition rates in the late Holocene, however, David argued, signified that the use of the site changed, with artistic endeavours increasing, even though occupation events dwindled (David 1990b; David and Chant 1995; Figure 3.4).
David et al. (1993) also performed PIXE analysis of 36 ochre samples from the Fern Cave excavation, determining that the majority of the ochre was likely sourced locally. David used the results from the Fern Cave excavation as supporting evidence of the increased regionalisation of north Queensland in the late Holocene (see section 3.13). The rock art motifs of Fern Cave were also targeted for direct dating (see section 3.18).

3.7 Echidna’s Rest Cave

The third comprehensively documented excavation was conducted at Echidna’s Rest, also located in the central section of the limestone belt. David (1990a) concluded that Echidna’s Rest displayed a slightly different occupational pattern to Fern Cave, however, with only minimal use of the site until 3000 BP, when the deposition frequencies of cultural materials increased dramatically, finally peaking in the late Holocene (David 1990a; David and Chant 1995). Stone tools including woodworking implements were most numerous in the excavation units pertaining to the last 700 years, indicating that those types of activities became increasingly important at the site in the recent past (David 1990a; David and Chant 1995). The occupants of Echidna’s Rest targeted a specific prey range consisting mostly of adult rock wallabies, and they maintained the living space with what appears to be designated areas for stone tool production and hearth related activities (David 1990a; Figure 3.5).

Echidna’s Rest has several panels of rock art, consisting primarily of charcoal drawings and a single hand stencil. Some of the charcoal drawings have been directly dated (see section 3.16), and the age of the rock art motifs corresponds with the late Holocene radiocarbon excavation dates from in situ charcoal fragments, suggesting that Echidna’s Rest may have been utilised as a shelter and rock art site until the modern contact era.
with the visible rock art motifs mainly dating from the last 800 years (David et al. 2000).

3.8 Summary of excavation results

The excavated sites in Chillagoe-Mungana district comprise some of the pioneering archaeological work in north Queensland, providing some initial dates of occupation for the region. The three main excavations (Echidna’s Rest, Walkunder Arch, and Fern Cave) suggest, at least for these individual caves, the Chillagoe district was used for occupation and rock art production from the Pleistocene until the late Holocene. While site function and use varied, and the factors and forces which motivated people to travel to the area may have shifted over time, the limestone belt maintained a significance for the Aboriginal groups in the area, and rock art production continued and seemingly increased at certain sites, despite the fluctuations in habitation.

While the results of the three main excavations provide valuable contextual information for the occupation pattern in the limestone belt, unfortunately, these studies only scratch the surface of the archaeological prospects of the karst formation. These sites represent a small sample of the numerous rockshelters and caves in the region, with only 5 out of the 49 rock art sites being targeted for archaeological excavation, and with only three comprehensive reports. In addition, all work has been clustered at certain portions of the limestone belt; all five excavations are located in either the central (Fern Cave and

Figure 3.5 Echidna’s Rest
Echidna’s Rest) or southern sections of the limestone belt (Pillar Cave, Wullumba, Walkunder Arch). No excavations have been carried out in the northern section of the karst. The Chillagoe region still has much yet untapped archaeological potential.

3.9 Open sites and artefact scatters

The Chillagoe karst encapsulates more site types than just rockshelters and caves. David (1996a) surface sampled 46 artefact scatters located in open sites adjacent to the limestone belt. The majority of these scatter sites, containing between 1 – 56 individual stone tool fragments, skirt the Walsh River on the northern boundary of this project’s survey area (David 1996a: 46; Figure 3.6). Many of these open sites along the Walsh were described by members of the William Hann 1872 expedition in their accounts, demonstrating that the locations along the river were used by Aboriginal groups in the area at contact time (see Chapter 2.5.1). During the course of this project, numerous artefact scatters were observed around the bases of the karst towers, suggesting that the total number of open sites in the area may figure significantly higher.

While the Chillagoe-Mungana limestone belt contains a multitude of artefact scatters with a range of tool types, Lamb’s (1996) analysis of the lithics found in Fern Cave is the only study of the tool assemblage of the Chillagoe limestone belt performed to date. Lamb (1996) analysed the stone artefacts from the Fern Cave excavation to determine the underlying factors for the increased artefact deposition rates during the Last Glacial Maximum (LGM) which David (1991) had proposed. Lamb (1996) argued that during the LGM, similar to David’s findings for the ochre recovered from the excavation, there was a shift toward the use of locally acquired stone, primarily chert, sourced within 3 km of Fern Cave. Lamb (1996) suggested that this change was possibly due to the abundance of permanent water sources available in the local area, as opposed to surrounding areas which were drier at that time.

Lamb (1996), however, recognised that these results were only preliminary. In fact, a future comprehensive survey and analysis of the range of stone and bone tools present in the region would be of significant value since archaeological knowledge about the range, type and use of lithics in the karst district is limited.
3.10 Rock art recording: the initial surveys

In addition to the five excavations and surface sampling, rock art surveying in the Chillagoe karst began close to 50 years ago, but the bulk of the work has been sporadic.

The first rock art records of the area comprise a few drawings, plates and photographs created in the 1960s and 1970s by Ron Edwards, an artist working with archaeologist Charles Mountford. These early drawings are useful as a visual record of the sites half a century ago, sites which have been subsequently damaged by graffiti and natural threats, or which are now inaccessible on pastoral and mining leases. Unfortunately, the majority of these early artistic renderings have been lost (Edwards 2007).

Graham Walsh (1983) briefly visited the Chillagoe-Mungana limestone belt and the Mitchell-Palmer limestone formation further to the north, assessing the rock art and burials found at several sites. Walsh (1983) was the first to note the stylistic differences between the rock art of the Chillagoe area, which consists primarily of non-figurative designs, and the more figurative artistic tradition found north of the Walsh River in the caves of the Mitchell-Palmer karst. These stylistic differences were explored further by subsequent researchers (see Cole and David 1992; David and Chant 1995; David and Cole 1990; David and David 1988; and section 3.13). Walsh (1983) also commented on the conservation issues present, detailing the damage caused by seepage, dust, and mud wasps, as well as issues resulting from human visitation (e.g. forged art and graffiti),
illustrating that conservation pressures were already a notable concern in Chillagoe even 30 years ago.

The Chillagoe Caving Club has also been involved informally in locating rock art and archaeological sites in the Chillagoe formation since the 1980s. Their archived photographs of sites, though few in number, are a useful source to track ongoing damage and maintenance issues at various sites.

3.11 The systematic surveys: David and David (1988), David and Chant (1995), and David (1992)

The first extensive source of information on the Chillagoe rock art assemblage was the recording of forty one sites in the Chillagoe district by David and David in 1988. David and David (1988: 153, 154) documented 794 “pictures,” including paintings, stencils and engravings, and they identified motif types, production techniques and pigments used. Especially useful was the inclusion of individual drawings of the entire motif catalogue. The David and David (1988) survey concluded that the rock art of the Chillagoe area represented a non-figurative stylistic tradition distinct from the rock art province of Cape York further to the north.

The David and David (1988) survey, however, has a few drawbacks since it did not report where in the limestone belt the motifs were located, treating the karst as one homogeneous assemblage. The study summarised the combined motif totals of all 41 sites from Ootan in the south to the Walsh River in the north, a 60 km range. The report was not concerned with the geographic distribution of sites and motifs across the limestone belt, and no site specific motif catalogues were included. Also, David and David (1988) surveyed only 25.2% of the limestone karst, meaning that many of the towers were not included (Bruno David pers.comm. 2014; David and David 1988: 147).

The results of this initial survey were subsequently republished in Cole and David (1992) and David and Chant (1995), with some changes. David and Chant (1995), for example, reported one less site (40 sites in total) and clarified the breakdown of the production categories (667 paintings, 54 stencils, 68 engravings and 5 composite pictures: 794 total).
One key difference between David and Chant (1995) and the earlier David and David (1988) study is that, in David and Chant (1995), the karst formation was divided into three survey sections, formed by wide east-west horizontal bands. These three survey divisions were stacked from south to north, running from Chillagoe, to the more central Mungana section, and finally culminating in the Rookwood area in the north. The motif catalogues were reported as a summary of all the sites within each survey section, combining the results for the eastern and western side of the limestone belt. Again, as with the David and David (1988) survey, no individual site motif lists were included.

The David and Chant (1995) survey focused on the broad south to north divisions of the limestone belt to see whether stylistic differences could be observed between the three survey bands. (David and Chant [1995] determined there were none). Unfortunately, because of the way the survey area was divided, any potential variations between the eastern and western sides of the karst formation, which corresponded to the linguistic and social boundaries present in the region in the late Holocene, remained unclear. Also, David and Chant (1995) did not analyse the variations between the site types and the motif catalogues of individual sites within the survey sections to explore the intra-site relationships present in each section of the limestone belt.

David and Chant (1995) proposed a relative chronology for the rock art motifs based on their subjects (iconography) and pigment types. Because the white ochre pigment (kaolinite), the predominant colour used in the Chillagoe assemblage, is unstable, they argued that the majority of the surviving motifs may have a maximum age of the mid to late Holocene (David and Chant 1995). The iconography of the motifs, according to David and Chant (1995), also support this age range. The depiction of dingo paw prints at the Castle Rock site, for example, is evidence that these motifs date from after 4000 - 3500 BP, the approximate time of the introduction of the dingo into mainland Australia (David and Chant 1995). The highly patinated engravings, however, they assert, are potentially older, possibly Pleistocene in origin, although they did not discern any patterns in the superimpositions of the motifs (David and Chant 1995).

The primary purpose of the David and David (1988) and the David and Chant (1995) surveys was to record the rock art found in the limestone belt in order to compare the Chillagoe district with the other rock art provinces in north Queensland. When the
David and David (1988) study was completed, rock art research, especially in Queensland, was in its infancy, with large geographic areas still unsurveyed. The David and David (1988) survey (and the subsequent David and Chant [1995] record) were pitched at this regional scale, carving up Queensland into large rock art provinces, attempting to distinguish the differing stylistic regions. These two initial studies were used to define the broad differences of the rock art provinces of the north, to map out the areas of stylistic cohesion and diversity to better understand the differing socio-cultural networks. David and Chant (1995) concluded that the Chillagoe-Mungana assemblage was stylistically most closely related to areas many kilometres distant, such as Mt Isa to the west, the White Mountains to the south, and Ngarrabullgan to the northeast (see also Cole and David 1992; David 1998; David and Cole 1990). David and Chant (1995) argued that the stylistic diversity of the differing rock art provinces was a result of the increased regionalisation in the mid-late Holocene. The major stylistic boundary in Queensland, according to David and Chant (1995), lies to north and south of the Walsh River, with Chillagoe as one member of the large, sprawling socio-cultural network which encompassed the semi-arid interior of Queensland (David and Chant 1995).

While being excellent foundation investigations, these two surveys, however, were incomplete. Subsequent studies suggest that a number of motifs and sites were not included in these initial projects, either because some sites were not yet located or, in terms of the engravings, certain rock-markings were purposefully not included due to questions whether they represented utilitarian rather than symbolic activity. In terms of missing sites and motifs, for example, David and Chant (1995: 478) reported “only two hand stencils” in the Chillagoe survey area; later studies found additional stencil sites, and 104 stencils are now know to be present in that section of the limestone belt (Ellwood et al. 2013; Watchman and Hatte 1996; Winn 2009; section 3.12 and Appendix 2). Another important distinction between the David and David (1998) and David and Chant (1995) initial rock art studies and subsequent projects (including this PhD) is that abraded grooves and cupules (engraved pits) were not always incorporated in the motif counts. While noting their presence in the shelters, David and David (1988: 153) and David and Chant (1995: 475) believed the abraded line motifs in particular were associated with tool making activities rather than rock art production. Also, at
several sites, cupules were not documented in the motif catalogues. In the David and David (1988) survey, for example, 22 painted and drawn motifs were recorded at one shelter, but the 232 cupules present there were not.

Neither of these rock art studies included information provided by the Traditional Owners concerning the use of the limestone belt in the recent past. In fact, the sole archaeological study in the Chillagoe area to incorporate traditional knowledge was performed when David (1992b) analysed the spatial distribution of certain motif types within the landscape of the Chillagoe limestone belt (i.e. the position of certain motifs in relation to the base or slope of the limestone towers) and their frequency of occurrence in conjunction with occupational deposits in order to see any patterns of motif choice and spatial positioning. This research also is the only previous study to focus on the relationship between site type and motif characteristics in the Chillagoe assemblage. David (1992b: 161) concluded that hand stencils were more likely to be positioned high on the limestone towers in small overhangs and niches, not associated with occupational deposits. Other motif types, David (1992b) determined, are generally found lower, centrally placed in rockshelters and caves. After consulting with several Aboriginal people (whose group affiliation was not noted), David (1992b) argued that hand stencils were used in conjunction with burials, rather than occupational areas. This study, however, was preliminary. At that time, David (1992b: 160) had results for only 48 stencils at 8 sites, with the majority of stencils in the Chillagoe assemblage yet to be located. Also, subsequent consultation with Wakaman elders indicates that the Aboriginal people included in the David 1992 study may not have had full access to the traditional knowledge concerning the significance of stencils in the limestone belt (Rodney Chong, Wakaman elder, pers. comm. 2014).

3.12 The systematic surveys: Watchman and Hatte (1996)

Watchman and Hatte (1996) conducted the only other systematic rock art survey in the Chillagoe-Mungana karst, cataloguing the rock art at eight sites in the Walkunders complex in the southern section of the limestone belt. The Watchman and Hatte (1996) survey is key because, prior to this project, it serves as the sole alternative recording and analysis of the rock art in the Chillagoe formation, concentrating on a single site
complex, thus giving a different perspective on rock art production in the area and how the sites may have functioned as a group.

Watchman and Hatte (1996: 87) identified multiple motifs which had been left out of earlier studies, discovering two major stencil sites, containing 95 stencils of hands and material culture items. These two stencil sites contradicted David and David’s (1988) and David’s (1992b) assertion that stencils in the Chillagoe limestone belt were primarily positioned high on tower walls in small concentrations.

In addition to cataloguing the motifs, Watchman and Hatte (1996) analysed the composition of the pigments found in the paint at four sites, using fourier transform infrared spectroscopy (FT-IR) and x-ray diffraction (XRD). They concluded that the white pigments used were “essentially composed of kaolinite and quartz,” while samples of the red pigments contain haematite or hydrated iron oxides (Watchman and Hatte 1996: 88). The black paint was not composed of manganese but instead used charcoal as the colouring agent, and the yellow pigment consisted of a mixture of oxalate, hydrated iron oxide and kaolinite (Watchman and Hatte 1996: 89). All of the pigments were most likely sourced locally (Watchman and Hatte 1996). Watchman and Hatte’s (1996) research into the pigments supplements David et al.’s (1993) PIXE analysis of ochre found in the excavation of Fern Cave, indicating that the minerals used in pigment production in Chillagoe were not transported into the region.

Watchman and Hatte (1996) also performed laser AMS dating of the gypsum-oxalate crusts over several motifs. The results of the direct dating of the rock art are discussed in section 3.17, but one of the aims of the Watchman and Hatte (1996) work was to correlate, if possible, any dates obtained from the direct dating of the rock art with the results from the excavation done at the site by Mardaga-Campbell (1995). As stated in section 3.5, Watchman and Hatte (1996) proposed that rock art production was not necessarily linked to habitation at the site, that rock art was created even in the periods when the site appeared to be abandoned.

The Watchman and Hatte (1996) study demonstrated that there were gaps in previous studies and that the rock art found across the Chillagoe karst would benefit from further research.
3.13 Regional studies

After these initial rock art studies, the attention of researchers turned to placing the rock art of Chillagoe into a Queensland-wide regional context (see Cole and David 1992; David 2002; David and Cole 1990; David et al. 1997; David and Chant 1995; David and Lourandos 1998; Morwood 2002). Research into the individual motif types of the Chillagoe precinct ceased, and the focus of researchers moved to a regional scale, where Chillagoe was included only as one of a number of districts in Queensland to be analysed as a total group. These regional studies were focused on geographically delineating the rock art provinces in Queensland in order to determine the nature of the interaction between groups according to areas of stylistic similarity (or difference) as a result of increased regionalisation and intensification (see Chapter 4 for a discussion of regionalisation). Chillagoe’s significance as an individual district, its function for the local Indigenous populations, and its relationship with the surrounding area, was no longer addressed. While research into surrounding rock art provinces is ongoing (e.g. Cape York Province, North and Central Queensland Highlands, and the Wet Tropics), the Chillagoe-Mungana area, since these initial studies, has had limited archaeological research.

The extent of the large rock art provinces in Queensland has now been generally established. One avenue of current rock art research is to revisit these stylistic provinces, to examine the areas of interaction on their boundary zones, to investigate the changing cultural connections on the border areas, and to determine whether these influences are visible in the local rock art record. (For examples of rock art junction studies see Fullagar et al. 1999; Taçon 2005a, 2013; Taçon et al. 2003; Ward 2004; Ward et al. 2006). The previous Chillagoe-Mungana rock art studies, although excellent foundational investigations, are largely inadequate for this purpose.

3.14 Limited Traditional Owner consultation

The early archaeological excavations and rock art surveys at Chillagoe had limited Traditional Owner involvement and input, with several researchers expressing difficulty in identifying appropriate Traditional Owner consultants (Campbell and Mardaga-Campbell 1993; David and Cole 1990; John Campbell pers. comm. 2014; Elizabeth Hatte pers. comm. 2014; Mireille Mardaga-Campbell pers. comm. 2014). At the time of
these initial archaeological studies, there was a lack of anthropological data on the Aboriginal groups who used the limestone belt. The traditions and cultural knowledge of the Wakaman people, in particular, were largely unfamiliar to the research community.

This dearth of ethnographic knowledge was summarised by David and Cole (1990: 794) when they stated:

…little is known of the peoples immediately south of the Mitchell and Palmer Rivers, such as the Wagaman of the Chillagoe region…No anthropological work has yet been undertaken on this issue, although Chase (pers. comm. 1989) has noticed that to the north of the Mitchell River Aboriginal people talk of Chillagoe as the area of origin for various new cultural norms which have come in very recent times.

This lack of information on the inhabitants of the limestone belt prior to European contact was echoed again in Cole and David (1992).

While previous researchers may have consulted with various Aboriginal people residing in the Chillagoe township for their research projects, because of the major upheavals in the Chillagoe area due to the arrival of Europeans (as detailed in Chapter 2), many of the local Aboriginal population residing in town appear to have historic rather than traditional ties to the region, perhaps limiting research access to comprehensive knowledge of the sites in the limestone belt or to only one group’s perspective of the story. Although David spoke with several elders and long-term non-Indigenous residents in the Chillagoe area in the 1980s, it was unclear whether these people had appropriate traditional knowledge (David and Cole 1990; David 1998a; Bruno David pers. comm. 2014). The limited Traditional Owner input in previous studies may have influenced the conclusions regarding the cultural context of the motifs and sites.

### 3.15 Direct dating projects

In addition to the five excavations and the rock art surveys, several direct dating projects have focused on the rock art of the Chillagoe-Mungana limestone belt. The results of these projects provide some chronological anchors, establishing a tentative sequence of rock art motifs of the area.

Rock art direct dating projects in the Chillagoe district have been undertaken at 7 sites across the limestone belt. Motifs have been sampled primarily at the three main
excavation sites (Walkunder Arch, Echidna’s Rest, and Fern Cave) in addition to several individual samples taken at other isolated locations. No direct dating has been undertaken at Pillar Cave, although excavation results are available (Mardaga-Campbell 1986). Three different dating techniques have been employed: radiocarbon dating, laser AMS dating of rock surface accretions, and FT-IR imaging (Armitage et al. 1998; Campbell 2000; Campbell et al. 1996; Campbell and Mardaga-Campbell 1993; David 1992a; David et al. 1999; David et al. 2000; Goodall et al. 2009; Mardaga-Campbell et al. 2001; Watchman and Campbell 1996; Watchman and Hatte 1996). Charcoal motifs have been dated at five sites. The gypsum-oxalate crusts over several painted and engraved motifs have been tested at the Walkunders complex, and a single project by Goodall et al. (2009) has employed FT-IR imaging of stencils at one site (Fern Cave). To date, no uranium series dating has been undertaken in the Chillagoe region.

In terms of the location of the sites sampled, three of the five sites targeted for radiocarbon dating are within the central area of the limestone belt, with no sites in the northern region sampled and only two sites targeted in the southern section. Neither of the southern sites which were sampled for radiocarbon analysis have been excavated, so, unfortunately, the direct dating results for the charcoal motifs cannot be compared with excavation dates for those locations. In fact, out of the five sites included in the charcoal motif dating projects, only Echidna’s Rest (David et al. 1999) has both excavation and direct dating results, and they are broadly similar (see section 3.7).

The list of dates obtained in the various projects is presented in Table 3.1, with the exception of the FT-IR imaging of the stencils at Fern Cave which produced only relative dates. These results were often reported by researchers in multiple publications, so in the interest of brevity in the table, only the primary reference is included. Also, the table’s site names and numbers and the motif descriptions correspond to the specific authors’ designations (and they do not relate to the site numbers used in this project).

### 3.16 Radiocarbon dating of charcoal motifs

The visible charcoal motifs appear to have been produced in the last 3500 years, even though sites in the Chillagoe karst have older occupation dates (David 1992a; David et al. 1999, 2000; Armitage et al. 1998; David and Lourandos 1998). It is unclear whether this tendency to produce drawn charcoal motifs is purely a late Holocene development.
or whether this trend is a result of taphonomic factors, since only visible motifs were targeted for dating. Potentially older motifs may no longer be discernible. These findings are valuable in establishing a baseline, however, because motifs produced in charcoal are prevalent in the Chillagoe assemblage, found in all survey areas and at a majority of sites. Charcoal motifs are also usually positioned under layers of painted motifs, but superimposed over deep engravings, allowing for relative chronology of motif types and techniques to be established (see Chapter 8). The dates obtained for these charcoal motifs were also used as supporting evidence for the increased regionalisation of north Queensland in the mid to late Holocene (see section 3.13). The results of the various radiocarbon dating projects show that charcoal motifs were produced over a period of a few thousand years, and that rock art continued to be a significant cultural practice for local Aboriginal groups until the arrival of Europeans.

3.17 Surface accretions dating: gypsum oxalate crust

Watchman and Campbell (1996) and Watchman and Hatte (1996) employed laser AMS analysis of rock-surface accretions to examine painting events which have been preserved between microscopic layers of the gypsum-oxalate crust. Various dates were obtained by sampling the surface accretions either over engravings and painted motifs at the Walkunder Arch Cave site in the southern end of the limestone belt (Watchman and Hatte 1996; Watchman and Campbell 1996: Campbell 2000). While the results can not distinguish the shape and stylistic qualities of the motifs sampled, this technique can detect the presence of paint being applied to the rock surface in the distant past on the nanostratigraphic level. The reliability of obtaining a direct radiocarbon age for organic materials in gypsum oxalate crusts can be problematic, but the range of age estimates suggest that the application of pigment or charcoal to the shelter wall originated in the Pleistocene, with the oldest date for a painting event being about 30,000 years ago, with additional painting episodes occurring at “28 ka, 16 ka and 10.4 ka b.p.” (Campbell 2000: 80). Rock art production at the Walkunders complex continued in the early Holocene, with the layers over the ‘star burst’ engraving, sample number AA-9220, dating to 7085 ± 135 BP and a red anthropomorph (NZA-2574) dating to 9470 ± 120 BP, providing minimum ages for these motifs (Watchman and Hatte 1996; Campbell 2000).
<table>
<thead>
<tr>
<th>Motif Description</th>
<th>Sample (Pigment Type)</th>
<th>Laboratory Code</th>
<th>Site Name</th>
<th>Age Estimate BP (Radiocarbon Date)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barred Outline design</td>
<td>Charcoal</td>
<td>OZA576</td>
<td>Echidna’s Rest</td>
<td>Modern</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Infilled geometric design (circle)</td>
<td>Charcoal</td>
<td>OZA577</td>
<td>Echidna’s Rest</td>
<td>Modern</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Infilled geometric design (circle)</td>
<td>Charcoal</td>
<td>OZA578</td>
<td>Echidna’s Rest</td>
<td>Modern</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Irregular lines</td>
<td>Charcoal</td>
<td>OZA579</td>
<td>Echidna’s Rest</td>
<td>Modern</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Elongated, net-like grid</td>
<td>Charcoal</td>
<td>OZA573</td>
<td>Echidna’s Rest</td>
<td>400 ± 60</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Barred outlined design</td>
<td>Charcoal</td>
<td>OZA575</td>
<td>Echidna’s Rest</td>
<td>440 ± 55</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>2 concentric ovals</td>
<td>Charcoal</td>
<td>OZC441</td>
<td>Site 55</td>
<td>530 ± 105</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>3 concentric arcs</td>
<td>Charcoal</td>
<td>OZC440</td>
<td>Site 55</td>
<td>620 ± 170</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Elongated, net-like grid</td>
<td>Charcoal</td>
<td>OZA574</td>
<td>Echidna’s Rest</td>
<td>840 ± 70</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Striped irregular design</td>
<td>Charcoal</td>
<td>OZD423</td>
<td>Site 55</td>
<td>1000 ± 120</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Elongated, striped oval</td>
<td>Charcoal</td>
<td>OZC853</td>
<td>Site 55</td>
<td>1150 ± 90</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Elongated grid</td>
<td>Charcoal</td>
<td>OZC852</td>
<td>Site 55</td>
<td>1750 ± 180</td>
<td>David et al. 1998</td>
</tr>
<tr>
<td>Irregular lines</td>
<td>Charcoal</td>
<td>OZC438</td>
<td>Site 55</td>
<td>2080 ± 100</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Comb shape</td>
<td>Charcoal</td>
<td>OZC439</td>
<td>Site 55</td>
<td>3330 ± 440</td>
<td>David et al. 1999</td>
</tr>
<tr>
<td>Motif unknown: pigment in gypsum-oxalate crust</td>
<td>Red jarosite</td>
<td>OZA399</td>
<td>Walkunder Arch</td>
<td>3340 ± 60 (minimum age)</td>
<td>Watchman and Campbell 1996</td>
</tr>
<tr>
<td>Star shape with 14 radiating lines</td>
<td>Charcoal</td>
<td>OZB783</td>
<td>Mungana</td>
<td>3350 ± 350</td>
<td>Armitage et al. 1998</td>
</tr>
<tr>
<td>Star burst</td>
<td>Engraving</td>
<td>AA9220</td>
<td>Walkunder Arch</td>
<td>7085 ± 135 (minimum age)</td>
<td>Watchman and Hatte 1996</td>
</tr>
<tr>
<td>Anthropomorph</td>
<td>Painting</td>
<td>NZA2574</td>
<td>Walkunder Arch</td>
<td>9470 ± 120 (minimum age)</td>
<td>Watchman and Hatte 1996</td>
</tr>
<tr>
<td>Motif unknown: pigment in gypsum-oxalate crust</td>
<td>Red jarosite</td>
<td>OZA397</td>
<td>Walkunder Arch</td>
<td>10 400 ± 90</td>
<td>Watchman and Campbell 1996</td>
</tr>
<tr>
<td>Motif unknown: pigment in gypsum-oxalate crust</td>
<td>Red jarosite</td>
<td>OZA395</td>
<td>Walkunder Arch</td>
<td>16 100 ± 130</td>
<td>Watchman and Campbell 1996</td>
</tr>
<tr>
<td>Motif unknown: pigment in gypsum-oxalate crust</td>
<td>Red jarosite</td>
<td>OZA391</td>
<td>Walkunder Arch</td>
<td>28 100 ± 400</td>
<td>Watchman and Campbell 1996</td>
</tr>
<tr>
<td>Motif unknown: pigment in gypsum-oxalate crust</td>
<td>OZA390</td>
<td>Walkunder Arch</td>
<td>29 700 ± 500</td>
<td>Watchman and Campbell 1996</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.1: Results from direct dating projects in the Chillagoe-Mungana region
As stated in section 3.5, these results, when correlated with the findings from the excavations, indicate that rock art production and habitation at the site were not necessarily contemporaneous (Campbell and Mardaga-Campbell 1990). These surface accretion dating results are significant because they suggest that painted and drawn motifs, in addition to engravings, were produced in the Pleistocene, at least at this particular site.

3.18 FT-IR imaging: stencils

Goodall et al. (2009) sampled the stencils at Fern Cave using the technique of FT-IR imaging and Raman spectroscopy. Stencils, as acknowledged by Goodall et al. (2009), are generally difficult to date because the use of inorganic red pigment results in a low density of datable carbon. This combined technique is the only attempt to date stencils so far in the limestone belt. The results of this direct dating project can be compared with the excavation results obtained by David (1991) for the same shelter.

Goodall et al. (2009) sampled ten areas throughout the cave: five samples were collected near the peckings on an ochre-stained wall at the entrance; one sample was taken from the ceiling directly above the cave’s mouth; and four samples were obtained from the hand and arm stencils positioned on the phreatic pendants at the rear of the front chamber.

Goodall et al. (2009) determined that haematite was the primary source of red pigment, though clay was also present in all the samples. For the stencils on the rear wall of the chamber, Goodall et al. (2009: 2623) concluded that there was only a single layer of paint, suggesting a single painting episode “dating to sometime in the last 4000 years (as these occur above the base of the gypsum layers indicative that they were applied towards the end of the most recent dry phase).” Goodall et al. (2009) proposed that these particular stencils may be even younger, however, perhaps having been created in the last 1000 years. On the other hand, the sample taken from a stencil on the ceiling near the front of the chamber was potentially older, probably created prior to 14,000 cal. years BP, and most likely within the age range of 17,000 to 19,000 BP when correlated against the age of the ochres found in excavation and the rainfall curves for the time period (Goodall et al. 2009: 2623).
While Goodall et al.’s (2009) study furnished only relative results, it further corroborates the potential for Pleistocene rock art production occurring in the limestone belt since the FT-IR dating of stencils produced a similar age range to the laser AMS dating of the gypsum oxalate accretions in the Walkunders site complex. These findings suggest that a stencilling tradition was practiced in the Chillagoe region for thousands of years.

3.19 Direct dating summary

The results of the various dating projects demonstrate that rock art production occurred in the Chillagoe-Mungana district for approximately 30,000 years until the modern period (less than 200 BP), with the earliest date obtained for red jarosite pigment in gypsum-oxalate crust being 29,700 ± 500 BP (Watchman and Campbell 1996). While the exact age parameters of the Pleistocene rock art production across the limestone belt remain murky, especially in terms of the highly patinated, deep engravings, and the Chillagoe rock art assemblage would benefit from further direct dating research, what is evident is that rock art continued to be produced in the limestone belt until the arrival of Europeans.

The majority of motifs sampled, however, (mostly in charcoal) date from the last 3500 years, signifying that the predominance of the visible motifs of the Chillagoe district were potentially produced in late Holocene. The engravings, which are more problematic to date, may be considerably older. The dates obtained from these projects provide a tentative chronological sequence for the Chillagoe assemblage.

3.20 Conclusion

The previous research, both excavations and rock art study, is an invaluable foundation for this PhD project, providing general context for the occupation and site use of the Chillagoe-Mungana limestone belt. These early projects demonstrate the longevity of site occupation and rock art production in the area (from the Pleistocene through to European contact) and the general stylistic characteristics of the rock art motifs which distinguish Chillagoe from other rock art provinces in northern Queensland.

Although these studies are significant, gaps in the previous research remain. This PhD project, while examining the same region and rock art assemblage, adopts a new
approach and different goals than prior studies. This project adds and updates the rock art record of the area, interweaving Traditional Owner insight into the archaeological findings, to gain a fresh perspective on the significance of the region. Also, this PhD investigates the rock art with a different intent. This project’s purpose is not to differentiate the district from the surrounding rock art provinces, but, rather, to see how the interplay, interaction and influence of the larger regional socio-cultural networks is mirrored on the local scale. The theory and methodology of how these research aims are achieved is described in the next chapter.
Chapter 4 Theory and Methodology

4.1 Introduction

This chapter begins by outlining the theoretical approaches which underpin this project and by discussing the various rock art and archaeological models and theories that shape the analysis of the project’s results. This chapter then details the research methodology employed in order to achieve the project’s key research objectives (as presented in Chapter 1). In the section on Methodology, the practices adopted during fieldwork, the cultural protocols that guided the research and the classification system and analysis of the results are examined.

4.2 Theoretical framework

Currently, in Australia, there are various approaches in rock art research which examine variation in rock art assemblages as a consequence of a range of influences, factors such as environmental change, population pressure, and economic necessity. This project, however, is grounded in the theoretical method that analyses the stylistic characteristics of rock art motifs as a reflection of the socio-cultural context of the groups that created them. Using the tenets of regionalisation and the information exchange model (explained below), rock art production is viewed as a social process, and rock art motifs perform multiple functions for social groups, encoding the iconography of spiritual, social, economic and territorial messaging. By examining motif types and techniques in an area, insight can be gained into the social and economic interaction between groups; stylistic variations of motif forms can be used to map out territories and spheres of socio-cultural interaction across a landscape.

4.2.1 Regionalisation and intensification

In Australia, a model of regionalisation and fissioning provides a useful method for studying the archaeology of social groups. The regionalisation and fissioning model predicts that when pressures on populations increase, pressures caused by a range of factors such as demographic, social, and environmental change, social groups may splinter and realign with altered territorial boundaries, political composition and ceremonial rituals (David 1991; David and Chant 1995; David and Cole 1990;

Researchers have proposed that changes in the archaeological and rock art record in Cape York and other parts of Australia have been due to this increased regionalisation in the mid-Holocene (Barker 2004; Brady 2010; David 2004; David and Chant 1995; David and Cole 1990; Flood 1980; Lourandos 1983; Lourandos and Ross 1994; McNiven 1999; Morwood 2002). As the population of local groups increased, in resource rich areas, they occupied smaller, more bounded territories that they sought to mark and distinguish by using a greater diversity of rock art motifs, and, in more arid regions, large, open social networks were established (David 2004; David and Chant 1995; David and Cole 1990; David and Lourandos 1988; Flood 1980; Lourandos 1983; Lourandos and Ross 1994; McNiven 1999; Morwood 2002). Though the timings and underlying causes of these changes continues to be debated, this increased regionalisation led to the development of rock art provinces, areas of stylistic and cultural affiliations distinct from neighbouring groups (Franklin 2007; McDonald and Haskovec 1992; Mulvaney 2011; Ross 2013; Taçon 2013).

The intensification model positions rock art assemblages into regional networks and argues that the increased regionalisation in the mid-Holocene led to changes in the rock art record resulting in a greater diversity of motif types (Flood 1980; Lourandos 1983; David and Chant 1995; Cole and David 1990; Morwood 2002).

This increased regionalisation and stylistic diversity provides useful expectations for rock art studies. Style differences in rock art assemblages often mirror the social, economic and territorial difference between groups. By studying the degree of similarity or difference between rock art assemblages, it is possible to investigate the degree and nature of interaction between or within groups. Stylistic choices are a manifestation of social networks and interaction at a particular geographic and temporal location. They are a quantifiable measure of relationship and associations, and they indicate the degree of closeness and shared socio-cultural context of particular groups at a fixed time and
place. These stylistic variations can also serve to delineate boundaries of traditional territories and routes of Dreaming tracks, movements of Ancestral Beings through the landscape (see also section 4.2.7 for a discussion of Dreaming tracks). While it always problematic to discuss human communities based on material remains, and past interaction between groups is bound to blur boundaries, the information exchange model provides a useful method (described below) for examining rock art assemblages in terms of the social and economic messages that they encode.

4.2.2 Stylistic studies in archaeology and the information exchange model

When discussing the analysis of stylistic variation in archaeological assemblages, it is important to understand how the concept of ‘style’ has developed in archaeological research and the roots of the information exchange model.

Stylistic studies were initially used in archaeology and rock art research as a method of ordering assemblages and tracking chronological changes. In Australia, for example, early investigations of rock art took the form of recording of motifs and trying to fit them into overall chronological sequences according to their ‘style.’ These sequences of stylistic variation were then expanded to cover the whole continent, as early researchers sought to make a nation-wide synthesis of rock art (see Davidson 1937; Elkin 1949; McCarthy 1946, 1947, 1954). Without the benefit of direct dating techniques, early rock art investigators were attempting to make overall chronological series in order to draw conclusions on the development of Aboriginal rock art in a linear sequence, over time (see Davidson 1937; Elkin 1949; Franklin 1993: 3, McCarthy 1976, 1979, 1988; Morwood 2002: 56). Early Australian researchers were taking their cues from investigations being done on the Palaeolithic cave art in Europe, for example Breuil’s (1950, 1952) work on the images of Lascaux in France. European work was based on art history traditions, with attempts to classify images into rigid, strict temporal sequences according to interpretations of style (Franklin 1993: 3).

Building on this early research, Lesley Maynard, in the 1970s, proposed the first major ordering of pan-Australian art into a distinct chronological sequence. Maynard (1979) based her work on Edwards’ (1966, 1968) earlier study of the petroglyphs of Panaramitee station in South Australia, and she developed a three-tiered framework to describe the development and change of style in Australian rock art. Maynard (1979)
saw Australian rock art as developing over time with an increasing complexity in the subject matter and style of the motifs. While Maynard’s model was subsequently challenged, it provided the framework for much later research, and, although there has been a shift away from simple chronological timelines as being the sole cause of artistic variation, her work is still recognised as being influential (Franklin 1993; Lorblanchet and Bahn 1993; Morwood 2002).

While this work on stylistic chronologies was being undertaken, the discipline of archaeology as a whole in the 1960s and 1970s was undergoing a major theoretical shift, spearheaded by Louis Binford (1962, 1972) and other processual archaeologists. Binford sought to ground archaeological research solely in scientific method, applying methodical scientific principles and deductive reasoning. The ‘New Archaeologists’ believed that all archaeological work needed to be able to withstand rigorous scientific testing, with an “emphasis on cultural process rather than culture history; the explicit ‘testing’ of ideas using deductive logic; quantification; and the investigation of contemporary processes as a means of better understanding the archaeological record” (Morwood and Smith 1994: 21). In Australia, this shift resonated through the area of rock art investigation, driving research into new areas, ones where the style of Aboriginal rock art was no longer studied in isolation to determine artistic traditions and progression, but where the function of rock art in Aboriginal society became the focus of inquiry. Researchers now sought to place rock art into a cultural complex, to concentrate on what social, regional, economic and other information it may reflect (Morwood and Smith 1994). Variation in rock art was viewed as a symbolic representation of alteration in the society which created it. Changes in art motifs were seen now as a direct reflection of changes in socio-cultural elements of the associated population; motif variation could be studied empirically to give insight into larger cultural shifts. Rock art could now be viewed as a quantifiable window into societal change.

In Europe this new type of research was exemplified by Leroi-Gourhan’s (1965) work into the study of the spatial placement and motif selection on cave walls as a method of gaining insight. In Australia, John Clegg (1978, 1979) was one of the initial proponents of this new conceptualisation of rock art research. In his work at Bare Hill near Cairns, Queensland, he argued that changes in the function of the site and those of surrounding
areas accounted for the variation in the art and not a simple, linear chronological sequence (Clegg 1978: 12). Clegg believed that variation in rock art could be explained as a change of function or purpose of the site it was associated with, and that the notion of artistic progression, which formed the basis of earlier stylistic chronologies, was no longer the key element (Clegg et al. 2001: 36). There was an explosion of researchers beginning to study rock art using meticulous scientific principles, such as Rosenfeld et al.’s (1981) excavations and sophisticated internal chronology for motif types in Cape York, and George Chalpouka’s (1993) detailed work in the Northern Territory. Probably most notable was Robert Bednarik’s establishment of the Australian Rock Art Research Association (AURA) in 1983. Rock art science came to the forefront in Australia, and it would dominate inquiry for the subsequent decade.

While the scientific methods of processual archaeology continued to be influential for a number of decades, an alternative view of archaeology and the significance of style also grew. Hodder (1982, 1986), in what later became known as postprocessual archaeology, argued that archaeology should not been seen in isolation, divorced from the context of the society that produced it, with only strict scientific principles applied to its investigation. Hodder (1982, 1986) stressed that archaeological interpretation should be based on the contextual information, that only by understanding the larger context of a society could material objects find their meaning. Stylistic variations of assemblages were a result of different social groups (Hodder 1986). Gamble (1982) applied this concept to material culture items, Paleolithic Venus figurines, arguing that the figurines were a product of particular social systems, and that the stylistically similar objects were a method of visual communication. ‘Style’ could be viewed as a form of social messaging and a conduit for information exchange. This conceptualisation of ‘style” formed the basis of the information exchange model.

In terms of rock art research, the underlying basis of the information exchange theory as it refers to rock art regions is “the belief that style relates directly to cultural behaviour, that the distribution and interaction of different groups should be identifiable through an analysis of certain stylistic traits” (McDonald 1999: 146). The information exchange model grew out of work by Wobst (1977) and Sackett (1977) on style which determined that stylistic choices are culturally mediated, and that choices of certain styles are a
fundamental method of connecting members of a community who may be spread over large geographic distances, not in direct verbal contact with each other.

According to Sackett (1977: 371), stylistic choices are “socially transmitted, [and] the degree of similarity among the choices that are made in two historically related loci depends upon the intensity of social interaction shared by the occupants.” Groups that share a high degree of interaction and sociocultural background will make stylistically similar choices. Style is not a random choice; it springs from specific cultural and social contexts (Sackett 1977). By studying the degree of similarity or difference between archaeological assemblages (e.g. stylistically similar artefacts), or as it applies in this context, rock art assemblages, it is possible to investigate the degree and nature of interaction between or within groups. The information exchange model places rock art into particular social contexts and examines what type of messages the iconography encodes in order to shed insight into how social relationships between neighbouring groups are mediated (Conkey 1980; McDonald 1999; Sackett 1977; Smith 1992; Wiessner 1983; Wobst 1977). When using the information exchange model, rock art is seen primarily as a method of communication, a communication strategy by which groups negotiate their identity in relation to their neighbours (David and Cole 1990; Lewis 1988; Godwin 1990; McDonald 1999; Veth and McDonald 2002). Stylistic choices are the main method for negotiating these interactions. When groups exhibit stylistic similarity, it is a reflection of the closeness of their ties, both geographically and interactively (David and Chant 1995; David and Cole 1990; McDonald 1999; Morwood 2002). Groups that demonstrate similar stylistic traits often share strong socio-cultural links and are likely to be located in close proximity to each other and have overlapping interaction spheres. When stylistic characteristics are dissimilar, it demonstrates that groups have few close ties and little interaction and networking (David and Chant 1995; David and Cole 1990; McDonald 1999; Morwood 2002).

4.2.3 Style as communication

Wobst (1977) built upon this notion that stylistic choices are an indicator of social interaction, by arguing that stylistic choice was primarily a form of communication. The choice of a particular style is used by members of far-flung social networks who are not always in direct contact with each other to mediate their interaction, to minimise stress and to increase the predictability of their encounters (McDonald 1999, 2005; Wobst
Wiessner (1989) applied this concept directly to rock art research with her work with the Kalahari San, where she identified stylistic choices as the basis for negotiating identity.

In Australia, stylistic comparisons and information exchange theory have been used to analyse various rock art regions across the continent (Brady 2010; Gunn 2011b; Franklin 1993; McDonald 1999, 2005; Morwood 2002; Ross 1997, 1999; Veth and McDonald 2002). For example, information exchange theory has been used by McDonald (1999, 2005) to analyse the rock art regions around Sydney and more recently to look at aggregation locales in the Western Desert. In her work on Sydney’s regional motifs, McDonald (1999) distinguished between engraving sites, which served as regional bonding sites, and sheltered pigment art, which demonstrated more individual, localised variation. In the Western Desert, the great stylistic variation present at aggregation locales (waterholes and resource-rich bounded areas within the arid environment) was shown to be a function of different groups exhibiting their individual identities when overlapping at the resource rich areas (Veth and McDonald 2002).

Information exchange theory can be used to predict and describe what types of rock art will be produced when the two different types of identity are emphasised.

Different types of social messaging (group versus individual) may manifest themselves in different choices of stylistic forms. In terms of rock art, group identity and regional bonding messaging may result in a more generic, homogeneous art assemblage. In locales where individual identity is emphasised, however, either between individual members of a group or individual groups competing against each other, a more stylistically varied art assemblage may result (McDonald 1999; Veth and McDonald 2002).

4.2.4 Group identity

In terms of rock art assemblages, where group identity is emphasised, there may be greater stylistic homogeneity. The motif forms and choice may reflect the emphasis on stability and generic social messaging across geographic locations at a certain time. In art assemblages where group identity is emphasised, the art assemblage may serve as identifier on different levels, both of inclusion and exclusion.
To the members of the community that the rock art assemblage represents, when they encounter the homogeneous style of motifs, it is a way of reinforcing group identity, of demonstrating inclusion to the members within a group, reinforcing membership and affiliation. Group messaging through rock art motifs, however, is also a method of marking territory and border control (Franklin 2007; McDonald 1999; Ross 1997, 1999; Taçon 1994, 2002; Veth and McDonald 2002). By marking localities with motifs that are easily identifiable with one particular group, especially on border areas, signposting identifiable (to outsiders) group affiliations, they serve to maintain control of location, even if members of the group are not in residence at the time. These rock art sign posts demarcate localities belonging to a particular group, and demonstrate exclusion to members from competing areas.

In Australia, there are numerous examples of rock art motifs serving as territorial identifiers. In the Sydney basin region, McDonald (1999) determined that the engraving sites, the art sites that reinforced group identity, were usually located on access routes, and not in the centre of any particular group’s territory; and, in the Mt Isa area, Ross (1997, 1999) demonstrated that particular Kalkadoon anthropomorphic motifs served different social functions, with the basic form, usually located in lesser known rock shelters, reinforcing local identity, while the detailed version, found at prominent waterholes, served as fixed sign posts, marking territory and access.

4.2.5 Individual identity

In contrast, where there is an emphasis on individual identity, the art assemblage may manifest itself in terms of high stylistic variability. When competing groups or individuals overlap at the same location, they sometimes seek to place their individual identities in the rock surfaces in order to distinguish themselves from other groups/individuals.

McDonald (1999) identified this individualised art choice in the pigment art located in the more private, domestic, rockshelter-type art of the Sydney basin, where individuals in a domestic context felt freer to produce art of a more varied variety, rather than art motifs that held more generic, social messages. Within a group, when smaller sections of a community compete, they will seek to emphasise their differing social identities. In the aggregation locales of the Western Desert, competition between individuals and
small neighbouring groups led to a greater stylistic variation, as small groups and individuals sought to establish their place in the social system (McDonald 2005). Art assemblages that are created by either individuals or small groups within a bounded network who are competing against each other may result in motifs of a varied, stylistically diverse nature as each separate group attempts to place themselves on the rock surface, to stake their claim.

4.2.6 Debates about ‘style’

It should be noted, however, that there has been ongoing debate about the nature and use of ‘style’ as the basis of analysis in archaeology (e.g. Boast 1997; Carr and Neitzel 1995; Conkey 2006; Conkey and Hastorf 1990; Domingo Sanz et al. 2010; Lorblanchet and Bahn 1993; Wobst 1990). The advent of direct dating methods for rock art motifs in the 1990s, for example, meant that style was no longer the sole method of developing chronologies, and researchers now had a powerful tool for determining the absolute age of a rock art motif. The discrepancies between found between absolute dates and earlier stylistic sequences caused researchers to question the validity of using style as a chronological marker (e.g. Bahn and Lorblanchet 1993; Bendarik 2002, 2007; Lorblanchet and Bahn 1993). However, other researchers raised concerns about relying strictly on direct dating methods due to limitations in the techniques, such as contamination of samples used in radiocarbon dating or the employment of techniques which were subsequently found to be flawed, e.g. cation-ratio dating (see Bednarik 2002, 2007; Domingo Sanz et al. 2010; Franklin 1993; Pettit and Bahn 2003; Rowe 2001; Steelman et al. 2005). Relative dating techniques, such as stylistic analysis, and absolute dating of rock art motifs are now seen as complementary, an approach that is used in this project (e.g. Clottes 1993; Domingo Sanz et al. 2010; Franklin 1993).

Stylistic studies have also been questioned as being subjective, a product of researcher bias (e.g. Bednarik 2002, 2007). Even amidst this continuing discussion, stylistic studies, in conjunction with other lines of inquiry (such as ethnography, rock art survey, previous excavation and direct dating evidence), are a useful approach because stylistic comparisons may provide insight into the identity and interaction of social groups.
4.2.7 Boundary marking and Dreaming Tracks

In addition to encoding information about social groups and identity, rock art sometimes acts to mark and delineate shared zones and trade corridors. Rock art motifs often trace the movement of Ancestral Beings along designated pathways, depicting the spiritual journey of various totemic entities through the physical geography of an area (Berndt 1976; Bradley 2008; Flood 2004; Franklin 2007; McDonald 1999; McBryde 2000; Mulvaney 1976; Ross 2013; Taçon 1993, 2005 a, b, 2011). These travels of Ancestral Beings, or Dreaming tracks, often link spiritually, socially or economically important geographical locations within and between territories (e.g. waterholes, quarries and hunting grounds; see Balme et al. 2009; Brumm 2004; Brumm and Moore 2005; Davidson et al. 2005; Doolan 1979; Franklin 2007; Gould 1990; Gunn 1997; Habgood and Franklin 2008; McCarthy 1939a,b,c; Morwood 1982, 2002; Mulvaney 1976; Paton 1994; Smith 1992; Smith and Burke 2007; Smith and Veth 2004; Taçon 2005a; Ward et al. 2006). These spiritual routes may mirror trade routes, corridors of movement of people, ideas and material culture (Aiston 1937; Doolan 1979; Peterson 1976, Taçon 2005a). The rock art motifs marking these localities can serve to map out these trade pathways, restrict access to resources or control movement through the landscape (Franklin 2007; McDonald 1999; Rosenfeld 2002; Ross and Abbot 2004; Ross and Davidson 2006; Taçon 1994, 2004, 2005a).

When territorial boundaries overlap and Dreaming tracks intersect, the junctions are sometimes visible in the rock art record. The rock art of Keep River region on the Northern Territory/Western Australia border, for example, shows influences from the west, east and south, changing social connections that are discernible in the variations in style, techniques and subject of the rock art motifs (Fullagar et al. 1999; Taçon 2005a, 2013; Taçon et al. 2003; Ward 2004; Ward et al. 2006). The Waanyi rock art of the greater Riversleigh area of north-western Queensland also exhibits characteristics of a significant trunk trade route crossroads (Taçon 2005a). The Waanyi and Keep River areas serve as examples of how junctions of major rock art provinces, Dreaming tracks and trade routes can be identified and traced through changes in the rock art of a region. The connections and influences on a particular location can be discerned in the stylistic characteristics of the rock art record, and any changes to the rock art assemblage may illuminate past spheres of interaction.
4.2.8 Informed versus formal methods

Two types of methodology have been identified as being fruitful for rock art research, two methods which are differentiated according to the amount of access a researcher has to sources conversant in the rock art’s creation: informed and formal methods.

Informed methods are used when there is

Some sort of insight passed on directly or indirectly from those who made and used the rock-art – through ethnography, ethnohistory, through the historical record, or through modern understanding known with good cause to perpetuate ancient knowledge. (Taçon and Chippindale 1998: 6)

Informed methods allow the researcher to analyse the rock art from the “inside,” to base research on insight into the function and meaning of the rock art gleaned from authoritative, knowledgeable sources (Taçon and Chippindale 1998: 6).

Formal methods, on the other hand, are employed when a researcher does not have access to this informed understanding, when analysis depends solely on what information is provided by the rock art images themselves, such as the archaeological and landscape context, the stylistic characteristics, and the relationship with other rock art assemblages (Taçon and Chippindale 1998).

Similar to many current rock art research projects, the analysis presented in this thesis represents a mix of these two approaches. While this project mainly relies on formal methods to analyse the stylistic characteristics of the rock art assemblage of the Chillagoe-Mungana district, these formal methods are supplemented by informed methodology, primarily through the use of Traditional Owner Interviews.

4.2.9 The input of Traditional Owner consultants

While this project uses the theoretical framework of information exchange and stylistic comparison studies as a method of interpreting socio-cultural networks and boundaries and spheres of interaction between groups as manifested in rock art motifs, this project also employs some techniques of ethnographic research to enhance the rock art research. The formal methods employed in this study (e.g. stylistic comparisons) are enriched by the addition of informed methods as well. Interviews with Traditional Owners (see section 4.11) have highlighted the value and significance of certain sites
and motifs, providing alternative insight and perspective that would have been lacking in a purely narrow stylistic cataloguing and comparison.

The value of ethnography as a tool to enhance rock art research has become increasing utilised in order to provide a deeper comprehension of rock art and its significance. Ethnography can provide a more nuanced understanding of individual motifs, sites and localities, especially how sites fit within broader stylistic regions. Various studies have highlighted the value of ethnographic information to inform and illuminate rock art research (e.g. Brady 2010; Brady and Bradley 2014 a b; Cole 2011; Layton 1992; Stone and Bahn 1993; Taçon 1992, 1993; Taçon and Chippindale 1998). Ethnography has the added benefit of informing the rock art research on a deeper level, showing relationships and alternative perspectives for interpreting sequences that may be missed in purely stylistic or formal studies. Interviews with Traditional Owners help to strengthen the foundation of rock art research and have been used in conjunction with the site specific motif catalogues to provide a more multi-faceted analysis of the rock art found along the Chillagoe limestone belt and how the region operates in the wider geographic area of north Queensland.

While much of the traditional knowledge concerning sites along the Chillagoe-Mungana limestone belt is restricted because of the culturally sensitive sacred nature of many of the motifs, the Wakaman Traditional Owners have generously provided contextual information regarding the ongoing significance of the area. The Wakaman Tradition Owners’ interpretation and insight has added greater depth to the archaeological analysis. This insight has not been readily available to previous researchers of the region (as discussed in Chapter 2 and 3), but the Wakaman support and participation in this project has allowed for a much more nuanced understanding of the rock art of the region.

Because of the culturally sensitivity of many of the sites and motifs found in this project area, this thesis represents a balance between rock art research and the wishes of the Wakaman community and the mutually accepted cultural protocols framing the research. This study is a complementary partnership between Indigenous traditional knowledge and archaeological research methods.
4.3 Project methodology

This PhD project utilises the theoretical model of information exchange to examine the messages encoded in the rock art of the Chillagoe-Mungana limestone belt for insight into the socio-cultural interaction of the Aboriginal groups in the semi-arid interior of north Queensland prior to European contact. The following methodology was employed to achieve these research goals.

In line with the regionalisation and fissioning model, it is important to identify rock art sites from various geographic locations in order to compare the stylistic characteristics of the rock art assemblages found in different areas. For this reason, rock art sites across the Chillagoe-Mungana limestone belt were sampled and recorded to provide a comprehensive catalogue of sites and motifs which could then be analysed.

This PhD project is primarily fieldwork based, supplemented by interviews with Traditional Owners. Initially, when this project was conceived, it focused primarily on recording the rock art sites in the karst towers of the Chillagoe-Mungana limestone belt in order to determine the nature of the territorial boundaries and the socio-cultural networks of the Aboriginal groups of north Queensland; however, the discovery of damage to rock art sites in August 2013 during the course of fieldwork widened the scope of the project to examine issues of Aboriginal cultural heritage preservation in Queensland and elsewhere in Australia. The imminent threats highlighted the challenges faced in preservation of cultural heritage sites, under the current Queensland Aboriginal Cultural Heritage Act (2003) legislation, in regions that have no native title holders, such as Chillagoe.

As outlined in Chapter 1, the broad goals of this project are (a) to catalogue and survey the rock art of new sites within and surrounding the limestone belt; (b) to update previous studies; (c) to conduct a comparative study of the Chillagoe motifs with other rock art catalogues of surrounding areas of Queensland; (d) to investigate, through consultation with local Aboriginal groups, the Traditional knowledge of cultural practices in the Chillagoe district; (e) to use the Chillagoe area as a case study to examine issues of Aboriginal cultural heritage preservation in the current legislative and economic context; and (f) to create, together with the Traditional Owners, a full
recording of rock art sites in the region which would serve as the foundation of a community-controlled database.

To achieve these research and community objectives, the following methods were employed in the field and in the analysis of the results generated during this project.

4.3.1 Determining survey target locations

The Chillagoe-Mungana karst towers present as a discontinuous line stretching approximately 60 kilometres, southeast to northwest, bounded by the Walsh River in the north, and open savannah plains in the south. The individual limestone towers vary in size, some being small, approximately a few hundred metres in diameter, while others can stretch a few kilometres in length and contain multiple rock shelters and deep caves. The smallest karst often have no external shelters and no interior caves and are easily surveyed within a short period, while the larger towers may contain multiple rockshelters, overhangs, and caves of varying sizes, and surveying may take several hours and return trips to complete. In addition to the external shelters, many of the larger karst also have caves with sizable internal passages and chambers. Carpentaria Cave, for example, found in the Mungana section of the limestone belt, approximately 16 kilometres west-northwest of the Chillagoe township, has a complex network of dark zone, internal passages, stretching at least 1.5 kilometres, linking at least seven known internal daylight chambers. Many of these internal caves required specialist caving equipment, and for safety and time considerations, they were not included in this project. Surveying was also sometimes impeded early in the field seasons due to the thickness of the microphyll vine thickets surrounding the towers and to the multiple stinging trees present in many of the rockshelters and cave entrances.

The karst towers are generally clustered together in groupings with breaks of open, grassed country in between. The Burke Development Road bisects the limestone belt, with tower outcrops occurring on both sides of the road. These natural breaks allowed for surveying to be conducted in discrete geographic locations, and they lent themselves to a natural ordering of limestone tower clusters to be targeted. For the purposes of surveying, the limestone belt was divided into three sections: Rookwood, Mungana and Chillagoe. These three primary sections were further subdivided into eastern and western halves, with the Burke Development Road serving as the approximate central
axis between the sections. The six survey sections were named CW, CE, MW, ME, RW, RE to reflect their respective geographic locations (see Figure 4.1). The natural and man-made breaks in the tower groupings allowed for the surveying to be ordered into designated sections of the limestone belt, so that activity could be confined to a particular bounded, geographic area, and once surveying of that section was complete, the next grouping of towers was targeted.

Target locations within each survey area were prioritised through consultation with the Wakaman community, discussions with local residents, and findings of previous studies. Satellite photographs and topographic maps were examined to identify likely locations for rock art sites based on proximity to water sources and cave and rock shelter placements. Sections of the limestone belt to be covered in each trip were determined prior to arrival in the field in order to maximise the efficiency of field visits.

![Image of survey sections](image.jpg)

*Figure 4.1 Map of the six survey sections (CW, CE, MW, ME, RW, RE) of the Chillagoe-Mungana limestone belt with Burke Development Road (in yellow)*

4.3.2 *In the Field: survey techniques*

After the targeted portion of the limestone belt had been determined, the survey team walked sections of the limestone towers to investigate any caves and rock shelters present in the area. Open artefact scatter sites at the base of towers and water sources on the surrounding plains were noted and described in field notes, as well as any evident historical material, but the focus of the surveying was the limestone karst towers. All
rock shelters and accessible caves were investigated, but, as stated above, caves that required specialist caving equipment were not included. The field notes described which particular sections of the karst and individual towers were surveyed (including information on which caves were not entered). The complete survey records were provided to the Wakaman Traditional Owners to serve as a future reference for researchers and heritage planners, but they have not been included in this thesis due to their cultural sensitivity.

When rock art sites were located, they were then documented and described in field notes and the information was entered into site recording forms developed specifically for this project (see Appendix 1.8 for a sample survey form). The following information was recorded for each site surveyed:

A) Each site was designated a unique site number, and general and specific site location data was recorded by handheld GPS and compass readings.

B) The details of site context were noted in terms of site placement; aspect; site measurements; and descriptions of any associated artefacts, deposits, unusual motifs or other features. Rough site plans were drawn in field notes, but because of the large number of sites contained in the survey area, fully drawn site plans were limited to a few major sites to provide a more detailed recording for future management purposes.

C) Any damage or threats to the rock art panels was noted as a record for future management and monitoring, such as impact on the site and rock art panels caused by wasp nests, termites, exfoliation, mineral encrustation, run-off, and damage from human and animal interference.

D) A complete record of the rock art panels and motifs was generated. Each motif was assigned a number. The motif inventories for each site included notations on colour (if any); motif production technique type (e.g. engraving, painting, drawing, prints and stencilling); motif form (see section 4.6); individual motif measurements and groupings and placement on the panel. Motifs were sketched, and panel measurements and orientation were noted as well as any visible damage.
These written records were supplemented by digital photography, both in 2D and 3D, of the site context, panels, individual motifs (both with/without IFRAO scales and with/without flash) and any management issues and concerns. The rock art recording methodology used in this project follows conventions employed widely in Australia (e.g. Burke and Smith 2004; McDonald and Veth 2012a; Taçon 2012; Whitley 2011). Some rock art sites, once located, were revisited several times during the course of the field seasons to note changes in the appearance of the panels under different environmental conditions (e.g. light, weather). Sites that were found to be damaged during this project due to mining activity and/or vandalism also had multiple visits to assess ongoing threats.

4.3.3 Field seasons overview

The fieldwork for this project was undertaken over three years, and because of limited time, areas for survey were targeted to provide a representative sample of all geographic sections of the Chillagoe formation. The Chillagoe-Mungana area may well yield sites and new motif types beyond this survey; this project, however, building on the foundation of earlier studies, serves as a baseline, comprehensive overview of the rock art found across the limestone belt.

Surveying occurred during the north Queensland dry season, between April and November, usually conducted one day a week (when feasible, depending on weather and other factors), with additional longer field trips scheduled in accordance to research needs.

While the results of the three fieldwork seasons are reported in Appendix 2 and summarised in Chapter 5, the following is an overview of the methodology and activities for each fieldwork season:

4.3.4 Fieldwork Season 1

One day a week, sometimes more, was spent surveying sections of the limestone belt. Time in the field was divided between surveying “new” limestone towers, sections that were not part of any previous study and locating sites where rock art was thought to be present either through anecdotal evidence from local residents or prior research. As of
early December, when surveying effectively ceased for Field Season 1 due to the high summer temperatures, twenty three tower groups had been surveyed.

Of the surveyed sections, twelve sections appeared sterile; they had no rock art or visible archaeological surface remains. The other eleven sections contained rock art sites or site complexes (several individual sites in close proximity). All rock art sites in this initial field season were assigned site identifiers, GPS located, catalogued, described and photographed (see 4.3.3 In the Field for a further explanation of field methods). For sites included in the David and David (1988) (see Chapter 3) survey revisited in Field Season 1, the previous catalogue for pigment art was checked and updated, and the records for engraved, pecked and pounded motifs that were not included in previous studies were updated.

During Field Season 1, additional areas of the limestone belt were identified and prioritised for examination in Field Season 2.

4.3.5 Field Season 2

Multiple locations across the survey divisions were targeted, but fieldwork activity was focused primarily in the CE, CW and ME survey sections (see Figure 4.1). The Mungana section, in particular, saw the most extensive survey as it is relatively undisturbed by mining and pastoral infrastructure, with the majority of the tower karst (75%) in ME section being investigated. Late in Field Season 2, the RW area survey commenced. In August 2013, recent damage to the rock art site near site CE05 was detected in the course of a site visit. This discovery of damage was significant because it provided the impetus for the widening of the scope of the project to include cultural heritage management issues, as discussed in Chapter 9.

4.3.6 Field Season 3

Field Season 3 targeted areas in the MW, CE and CW portions of the limestone belt, which lie in Wakaman Traditional territory. Also, the final remaining portions of the limestone belt which were not covered in the first two field seasons were surveyed so that a representative sample of sites was achieved. Field visits also occurred to the wider regional areas surrounding the Chillagoe-Mungana limestone belt to get firsthand knowledge of the stylistic traditions associated within the broader regional context.
Sites in Quinkan country on Cape York Peninsula were surveyed in conjunction with Traditional Owners there, as well as site visits to the Central Queensland Highlands rock art areas. At the close of fieldwork, forty nine rock art sites were identified and over 2100 individual motifs were catalogued and photographed.

4.4 Cultural protocols for research

Before discussing the specific methodology of the collation of the individual site reports, it is important to relate the joint decisions made with the Wakaman Traditional Owners concerning the cultural protocol framework for this research and the reporting of results in this thesis and future publications. This project has been a collaboration with the Wakaman people, and through consultation, certain decisions and conditions concerning the reporting of individual site results have been mutually agreed on to protect the sites themselves (the tangible cultural heritage) as well as their associated intangible cultural knowledge. The cultural protocols surrounding the research and the dissemination of results have been jointly established, and they serve as the guiding ethical principles under which this research has been undertaken. This project was also conducted under a Griffith University Human Ethics protocol (see Appendix 1.1).

4.4.1 Site reports

The Wakaman community has been provided with the full site specific reports generated by this project to serve as a foundation of a centralised, community controlled database. Summarised material appears in Appendix 2 and Chapter 5. The complete site records include detailed site measurements, a full photographic record of each individual motif as well panel and site context, descriptions and measurements of the site complex plus each individual motif, as well as an assessment of potential threats and management concerns. This documentation may form the basis of future management plans. The majority of the information in the records have been included in Appendix 2 in summary form, but because of limitations of space and the wishes of the Traditional Owners, the specific details of each individual motif have been encapsulated under more generic headings (as described below). The Wakaman community has asked also for restrictions on the specific site records in order to protect the cultural information contained in the site reports. For that reason, the specific site reports have been collated in Appendix 2 (which can only be accessed with Wakaman community
and researcher approval). Only general information is included in this thesis. Appendix 2 (the individual site records) will remain confidential in order to protect the culturally sensitive material.

Certain sites were identified by the Wakaman Community as being secret and restricted, based on gender-related traditional activities, and, therefore, for ethical considerations, those sites were not included in the site specific records for this thesis, even in Appendix 2. The Wakaman community members, however, requested that the sites be recorded for their own community records, so all information regarding those restricted sites remains solely in community hands. No site specific information or photographs pertaining to restricted sites is discussed here or in future publications.

The photographs and identification of certain motifs have also been deemed by the Traditional Owners to be of a restricted nature, so information regarding the specifics of those individual motifs is not included in Appendix 2 or elsewhere in this thesis.

4.4.2 Site locations

The Wakaman people also wish that minimal site location information be given because they have concerns that members of the public will attempt to find the rock art sites. Previous researchers have included in their publications maps and as well as the location of sites placed on silhouette outlines of the limestone towers. These previous publications were generated before the ubiquitous access of satellite imagery, meaning that when published, the site locations were difficult to determine and specific positions were protected. This protection, however, is no longer in effect, so after consulting with the Wakaman Traditional Owners, it was decided to include only very generalised information regarding site locations in this thesis.

The Chillagoe - Mungana limestone formation is often visited by members of the public who wish to undertake caving activities. While there are areas of the limestone belt where National Parks has placed signage posting restrictions and other locations where caving is permitted under permit conditions, many of the limestone towers fall outside of the park boundaries and there is a perception by the public that those locations may be ‘free for all’ areas. An element of the population visits and explores the area in an unregulated manner. In fact, very few of the sites surveyed for this project appeared to be untouched by modern visitation, most exhibiting signs of graffiti and a mix historical
and modern artefact debris. Because the region is known to have little oversight, there is concern that any specific site location may only increase the level of visitation (that members of the public would use even generalised location information included in this document to attempt to find sites), so in order to protect the sites, any maps illustrating the location of sites are shown with intentionally inaccurate positions. While maps detailing the exact localities of sites and the geographic distribution of particular motifs would be helpful to illustrate the discussion of techniques and motif types across the six survey areas, the wishes of the Traditional Owners and the need to protect and preserve these fragile sites from unregulated interference trumps any other consideration.

4.4.3 Site names

In prior research of the Chillagoe-Mungana limestone belt, archaeological and rock art sites have been designated with English names (e.g. “Fern Cave, the Walkunders, Echidna’s Rest, Pillar Cave”) or they have been identified by the specific limestone tower where they are found. The majority of individual karst towers throughout the limestone belt carry English titles, as well as the multitude of caves that are named by the Chillagoe Caving Club during their extensive mapping activities. In this survey, however, a conscious choice was made to reaffirm that these sites are the cultural property of the Wakaman Traditional Owners, and it was decided that the sites should not be identified with English signifiers which can be viewed as a form of cultural appropriation, distancing of the Traditional Owners from these significant areas. For that reason, English terms to label sites will not be used in this thesis, except in the discussion of previous research section in Chapter 3, where various researchers identified and published information concerning the sites using English names. In this thesis, sites are designated a number, and any discussion is undertaken using only that numerical identifier, or, if appropriate, the Wakaman language name. It is important that the Traditional Owners maintain the naming rights of these sites, since they also maintain their cultural ownership.

4.5 “Rock art”: the terminology

Before discussing the labels used to classify individual motifs, it is important to clarify the use of the term “rock art” in this thesis. There has been debate in the Australian rock art research community as to what terminology should be employed when discussing
images placed on rock surfaces. Discussion has centred on whether “rock-art” should be used with a hyphen or whether the word “art” should be used at all, since it carries connotations of images being created for an aesthetic motivation (“art for art’s sake”), or something produced as a commercial venture (see Brady 2010; Taçon and Chippindale 1998, 2007). Some researchers prefer to use other terms all together, such as “rock-marking” or “rock-pictures” (e.g. Ward and Tuniz 2000). For the purpose of this thesis, the term “rock art” has been chosen to describe the images/motifs/symbols placed on rock surfaces, primarily because it is used by AURA (the Australian Rock Art Research Association), it is accepted by the Wakaman Traditional Owners, and it is readily identifiable by the general public. The term “rock art” is employed, however, with the understanding of its layers of meaning.

4.6 Interpretations of “meaning”

Before examining the evidence of individual motifs, it is important to address the issue of “meaning” in rock art interpretation. In some parts of Australia (and, indeed, elsewhere in the world), it is still possible to rely on informed methods for interpreting rock art, as described in section 4.2.7. For example, an archaeologist or anthropologist is able to consult with an initiated and knowledgeable member of a local Indigenous community as to what the particular symbols of a rock art assemblage may “mean” (Chippindale and Taçon 1998; Morwood 2002). While this informed interpretation is extremely useful, providing insight into the representations and significance of messages contained in rock art assemblages, it is not available to researchers in every part of Australia (and even where it is available, there may be limited rights of access). Access to information in Aboriginal society also often varies with gender, age and level of initiation (see Chapter 9.11). In addition, in the cases where consultants are present, it is difficult to extrapolate backwards how the meaning of a symbol may have changed over thousands of years, particularly when abstract representations are used. The nature of symbols is that they can contain many layers of meaning, and, while in some cases for rock art interpretation in Australia, recent meanings and identifications of symbols can be gleaned from Indigenous consultants, how these same symbols may have functioned in past cognitive patterns is not as easily identifiable.
Fortunately, in the Chillagoe-Mungana region, the continuity of knowledge of the local Wakaman community has not been lost, but it does remain secret because of the nature of the motifs in the Chillagoe rock art assemblage and their significance to the Wakaman community. The Traditional Owners have insight into the symbolic significance of certain motifs. Their interpretations are much valued, and wherever possible, their informed insight was included in site specific notes, but because of the culturally sensitivity of the symbols encoded in the rock art, while a discussion of the rock art’s function and place in the social and economic context of the district is undertaken, there is no attempt to identify the “meaning” of the symbols beyond what the Wakaman community has deemed appropriate.

While interpretations of meanings are not examined, it is impossible to discuss the rock art motifs without assigning some sort of labels, especially if the symbols are to be sorted into categories and percentages counted and analysed. Clegg (1978) argued that the cataloguing of rock art motifs needs to be divorced from subjective interpretations, and he devised a system for descriptions of symbols (placing an ! in front of names) to highlight the point that he was not seeking to assign meaning to shapes (Morwood 2002). David and Chant (1995: 370) hesitate to go to that extreme, preferring to call attention to the fact that “our reference to the formal attributes of rock images are purely labels of form, identified from our own perspective.”

The labels and categories of rock art motifs in this thesis are largely based on Brady’s (2010) work which has been adapted for this project and the types of motifs found in the Chillagoe rock art assemblage. When using labels to identify rock art in this thesis, the intent is not to assign a meaning to a particular symbol, e.g. a ‘star’ shape is not meant to denote a celestial star; a ‘comb’ shape is merely a useful classification. Even stencils, which are more easily identifiable since a body part or an actual material cultural object (such as a boomerang or a shell) was placed on the rock surface and outlined with blown paint, may have many layers of meaning that are open to subjective interpretation. Stencils, in this thesis, are treated strictly as signifiers that a particular cultural object was present in the rockshelter when the painting occurred, rather than extrapolating any greater symbolic meaning. The labels used here should be viewed as simple and convenient identifying terms, without greater significance.
4.7 Site specific records

Once the sites had been recorded, all notes and photographs were collated into site specific records. Any information from subsequent visits was added, so the updating of information on certain sites was ongoing throughout the project. Any site-associated traditional knowledge furnished by Traditional Owners supplemented these field recordings. Many of the sites found had a low density of motifs (sometimes only one or two per panel), so the individual site records were simple. A number of more complex sites, however, exist at various locations in the limestone belt, with multiple motifs types and production techniques present (see Chapters 5 – 7 for detailed site information). Those high density panels required more extensive inventories.

The photographic record of many sites was also run through the DStretch image enhancement software program in order to examine any motifs not easily visible under ordinary conditions. DStretch is a decorrelation computer program designed specifically for the enhancement of rock art motifs through the manipulation of certain colour parameters. DStretch is used to augment the visibility of rock art motifs which may be too faint to be discerned under normal circumstances, allowing rock art researchers to view rock art which may be too deteriorated or degraded to be documented by conventional recording methods (see Brady 2006, 2010; Brady and Bradley 2014ab; McNiven et al. 2002).

Once returned from the field, each individual site report was then collated and the motif inventories were sorted into various levels so that they could be compared and analysed. Adapted from Brady (2010), a hierarchical four-tiered method of motif recording was utilised in this project to sort and classify the rock art motifs found in the course of fieldwork. This classification method was used by Brady (2010) during a project researching the rock art of the Torres Strait Islands, and Brady and Bradley (2014a) also employed it while researching the rock art in the South West Gulf of Carpentaria region. While Brady’s (2010) work was based on a classification system only for paintings, in Brady and Bradley (2014a), the system was expanded to include the additional production techniques of stencils and prints. Brady’s (2010) system was chosen for this study because it has been used successfully in similar northern Australian contexts, and the clearly defined hierarchical categories allow for ease of sorting and comparison of
different aspects of an assemblage. While Brady’s (2010) system serves as a useful foundation, the Chillagoe-Mungana rock art assemblage contains a greater number of production techniques (the six techniques as described below) and a different variety of motif forms (e.g. a greater range of non-figurative motif types) so Brady’s classification system was expanded and adapted to suit the Chillagoe-Mungana context and the types of motifs present in the district.

4.8 The classification system

The classification system consists of four hierarchical levels. The first three levels of the four-tiered hierarchy are represented on the following chart, and the Level Four categories are discussed in the following sections under their respective Level Three headings:
4.8.1 Level One: Determinate vs. Indeterminate

Level One of the hierarchical system represents the highest order of classification of a motif. Each individual motif was examined to see whether its generalised form could be distinguished, and then it was assigned one of the two categories which comprise the Level One classification: Determinate and Indeterminate.

Determinate motifs have an identifiable shape (even if that form is abstract and irregular) which can be sorted into various subcategories.

Indeterminate motifs have no discernible shape or form and cannot be classified into any particular category, even though it is apparent that they were created by human production. If a motif was deemed to be Indeterminate either in the field or on subsequent analysis of field notes and digital images, the potentially Indeterminate motif was then subjected to DStretch computer enhancement to see whether the shape and type could be clarified (see section 4.7). Motifs which remained unclear, even after computer enhancement, were then sorted into the Indeterminate category. In general, Indeterminate motifs in the Chillagoe assemblage present as patches of pigment or charcoal/ochre crayon rubbings applied to the rock surface in amorphous, unclear shapes, or as motifs too badly affected by taphonomic and environmental factors to be recognisable. Not every site surveyed contained Indeterminate motifs, because of the range of preservation contexts and overall motif frequency on the rock art panels. In cases where the motif was deemed Indeterminate, the technique used to produce the Indeterminate motifs was noted. The technique results were included in the overall motif production breakdown for a site, but the individual Indeterminate motif was not included in further sorting assignation.

4.8.2 Rock art production techniques

All the motifs present at a site (both Determinate and Indeterminate) were also sorted into various categories according to the technique used to produce the rock art. The six different techniques of the Chillagoe rock art assemblage are detailed below:
Paintings are produced when wet pigment in a range of colours is applied to the rock surface to form an image. Paintings may be applied by various methods (e.g. with brushes or finger tips).

Drawn motifs are formed when a dry colour source, such as an ochre crayon or a charcoal piece is rubbed directly on the rock surface.

Engravings are produced when an object (such as another rock) is abraded, pecked or pounded against the rock surface. In the course of fieldwork, several types of engravings were found in the Chillagoe-Mungana rock art assemblage. In order to reflect these differences, several subcategories of engravings were created to fall under the general classification of engraving. Shallow engravings result when the rock surface is only lightly impacted, usually no more than a superficial pecking. Shallow engravings found in this survey generally appear ‘fresh’, lighter in colour than the surrounding rock surface, with little patina or mineral encrustation. Deep engravings are created when the rock surface is pecked, pounded or abraded to a depth of one or more millimetres. The deep engravings in this survey were usually found under a thick mineral crust with a high degree of patination. Since this gypsum oxalate crust forms only through the hydrological processes of wet/dry seasonal cycles, highly patinated engravings are understood to be relatively older than shallow, less patinated engravings. Abrasions (incisions) are formed when a sharp object (e.g. an obsidian flake or a sharpened stone or bone tool) is scored or rubbed onto the limestone surface, leaving, in terms of
incisions, a narrow cut with sharply defined edges, or for abrasions, a narrow channel carved into the rock surface.

Stencils are made when wet pigment is blown over an object placed against the rock art panel (for example a hand or piece of material culture, such as a boomerang or shell pendant). When the object is removed, the negative image of the object remains outlined in pigment.

Prints are created when an object or body part (e.g. a fingertip or palm) is covered in wet pigment and pressed to the rock surface, leaving a positive image of the object.

Combination motifs are generated when two or more technique types are used to produce a single motif. Combination motifs in this survey have been recorded in a separate technique category with the relevant notation regarding the types of production techniques used.

4.8.3 Colours

For the motifs created by the application of pigment to the surface either by painting, stencilling, printing or drawing, the colours were also sorted, and any relevant superimpositions were recorded.

A range of 15 colours or colour combinations were found in Chillagoe-Mungana rock art. Seven monochromatic shades were used, as well as seven different bi-chromatic combinations. Polychromes (tri-colour) motifs also occur in the limestone belt, although only one type of tri-chrome colour combination was recorded (red/white/black).

4.8.4 Level Two motif forms: figurative - non-figurative – tracks – stencils – prints

After the Level One categories were established for a particular site's motif catalogue and the production techniques and colours were collated, the Determinate motifs were then sorted into the next level of classification: Level Two.

Level Two represents five broad categories: figurative, non-figurative, tracks, stencils and prints.

Figurative motifs represent any motif which depicts identifiable anthropomorphs (human-like forms), zoomorphs (animal-like forms) or pieces of material culture (e.g. a weapon or a tool).
Non-figurative motifs are generally abstract, including geometric, linear and irregular shapes.

Tracks are depictions of human or animal tracks. Because of the close association of tracks with culturally sensitive traditional knowledge, the Traditional Owners have requested that no specific information regarding tracks be included in this thesis, so the specific track type (e.g. human, bird, macropod or dingo) will not be identified, although that information was noted in field notes and passed directly to the Traditional Owners.

Stencils fall into two classifications, being both a Level Two form and a production technique (see 4.8.2). In the Level Two hierarchy stencils depict a general category of motifs, which may be represented by particular body parts and material culture items.

Prints, similar to stencils, are included in the Level Two classification as an individual category (see 4.8.2).

4.8.5 Levels Three and Four motifs

Each of the Level Two umbrella categories (figurative, non-figurative, tracks, stencils, prints) is defined into various subcategories. The Level Three categories are then further divided into individual motif types. The following charts represent the Level Three and Four classifications.

Figurative Motifs

Figurative motifs are subdivided into 3 Level Three categories: anthropomorphs, zoomorphs and material culture.

Anthropomorphs represent human shaped figures, usually with arms, legs, bodies and heads. Sometimes the motif’s gender can be distinguished and noted (through indications of biological sex). Anthropomorphs are further divided into three Level Four categories: ‘simple,’ ‘complex’ and ‘body parts’. ‘Simple’ anthropomorphs have a basic shape (e.g. a stick figure), no associated accoutrements and solid infill. ‘Complex’ anthropomorphs have infilled decoration and may be wearing or carrying material culture items. ‘Body parts’ are representations of human body parts (e.g. hands) that are not created by stencilling or printing.
Zoomorphs are representations of animals. In the Chillagoe rock art assemblage, unlike some other rock art provinces in Australia, only a limited number of zoomorphic motifs have been identified. Four subcategories were created according to the animal varieties recorded: ‘lizard,’ ‘snake,’ ‘echidna’ and ‘other.’ ‘Other’ zoomorphic motifs encompass any animal form which cannot be confidently sorted into a specific faunal category.

Material culture motifs differ from stencils and prints of material culture items, because they are motifs produced in the likeness of material culture objects, they are not stencils or prints of the items themselves. In the Chillagoe assemblage, the range of material culture items exhibited is small, with only three Level Four subcategories: ‘boomerang,’ ‘shield’ and ‘club’ designs.

**Non-figurative motifs**

The range of non-figurative motifs in the Chillagoe rock art assemblage is extensive. The Level Three hierarchy system contains six categories: grid patterns; enclosed geometrics; open geometrics; linear non-figuratives; dot and dot variations; and irregular shapes. The six Level Three categories are further subdivided along the following lines:
Grid patterns are divided into ‘rectangle,’ ‘oval’ and ‘other shape variants’ according to their outline design.

Enclosed geometrics encompass a range of enclosed shapes such as ‘circle,’ ‘oval,’ ‘rectangle,’ ‘triangle,’ and ‘crescent’ variants.

Open geometrics is the umbrella heading for a number of openly geometric designs, such as ‘u-shapes,’ ‘straight lines’ (both horizontal and vertical), ‘x-shapes,’ ‘t-shapes,’ ‘curved lines,’ ‘parallel lines,’ and ‘tally marks.’

Linear non-figuratives are sorted into four subcategories: ‘star shapes’; ‘comb shapes’; ‘simple LNF’ which are linear designs with limited design elements (such as a few branching lines in a single motif); and ‘complex LNF’ which combine linear shapes into intricate patterns.
Dot and dot variations have two sub forms: a single ‘dot’ or a ‘dot series and clusters.’ In engraved motifs, cupules (engraved pits) fall into this non-figurative category.

Irregular shapes make up the remaining non-figurative motif designation. Irregular shapes are further divided into two categories: ‘simple’ forms with solid or no-infill decoration and ‘complex’ which include designs with dot or lined infill internal decoration.

**Tracks**

As stated earlier, at the request of the Traditional Owners, because of the sensitive cultural information encoded by tracks, the types of tracks recorded during field work are not identified and discussed beyond the Level Two designation in this thesis.

**Stencils**

Stencils occur in two Level Three forms: material culture or hands/arms. Further Level Four subcategories are divided into the type of material culture item stencilled (‘boomerang,’ ‘pendant’ or ‘club’) and the size of the hand stencil (if able to be determined) whether it may have been made by an ‘adult’ or a ‘child.’
Prints

Prints at Chillagoe are only found in one Level Three form: hand prints. They are further divided into Level Four subcategories: ‘palm’ (including partial palms) and ‘fingertip’ prints.

4.9 Survey section summaries

After each individual site motif catalogue was recorded and sorted according to the above classifications, the results were collated for all sites in each of the six survey sections, so that trends of form, colour and technique could be analysed for a bounded geographical area. The results of these section-wide summaries are discussed in Chapters 5-7.

It was determined that the site summaries would be presented both as individual motif counts as well as relative percentages. Since the motif counts across the sites and survey sections are not uniform, percentages were generated for each site catalogue, so the relationship between motifs types, colours and production techniques could be compared based on their relative frequency.
One purpose of this study is to probe the variability of rock art production techniques and motif types across the limestone belt. By examining whether particular rock art features (e.g. production technique, motif category) are present or absent in specific geographic locations in the karst formation, it may be possible to correlate those differences with the ethnographic territories which existed prior to European contact. As this type of comparison (presence v. absence) is the basis of the investigation, it was decided that employing correspondence analysis or other multivariate statistical techniques on the raw motif counts would not necessarily illuminate the data results to a greater degree than by comparing relative frequencies.

4.10 Comparisons with motif catalogues of surrounding rock art provinces

Another aim of this project is to analyse the Chillagoe-Mungana motifs not only on a local level, but also in the larger Queensland regional context. The Chillagoe-Mungana limestone belt is located between the major rock art zones of Cape York Province to the north, and the North/Central Queensland Highlands Province to the south. Both of these rock art provinces have had extensive rock art surveys and archaeological research, spanning multiple decades. The rock art assemblages of both districts is well documented (see Chapter 8 for a full detailing of research), so there is a wealth of available information, and there was no need for additional fieldwork in those parts of Queensland to yield catalogues for comparison. During the course of this project, however, both regions (Cape York Peninsula and the Central Queensland Highlands) were visited to photograph and examine the rock art assemblages.

Once the stylistic characteristics of the Chillagoe-Mungana rock art were determined on a local level (see Chapters 5-6), the rock art of the district was then compared to the surrounding rock art provinces, using the tenets of the information exchange model, to examine any patterns of socio-cultural interaction which may be evident.

When evaluating the Chillagoe-Mungana assemblage against motif catalogues of surrounding rock art provinces, relative percentage comparisons were again employed (where that data was available) because only general trends and associations can be easily analysed. At present, in rock art research, there is no universally accepted terminology to describe specific motif types and forms. Because researchers adopt their own individualised methods for recording rock art, often determining their own labels
(as in this project), it causes difficulties when researchers attempt to generate cross-comparisons of motifs from different regions and diverse rock art assemblages using statistical methods. What one researcher may call ‘linear non-figurative’ for example, may be catalogued differently by another researcher in another location, using a different motif labelling system, making the comparison between two regions problematic. Correlations between diverse motif assemblages cannot be plugged easily into statistical programs.

General comparisons may be undertaken with a degree of confidence, for example, comparisons of the Level Two classifications (figurative, non-figurative, tracks, stencils, prints). Anything Level Three or below, however, becomes increasingly difficult, since the finer grained classifications have no universally accepted signifiers. Production techniques, on the other hand, can be evaluated since rock art researchers have adopted generally accepted categories. Individual colour descriptions may also be dissimilar depending on the type of scale (or lack of) that is employed. Because of these issues, when discussing regional variations in rock art assemblages in this thesis, only the broad Level Two categories are assessed, and no statistical manipulation of the raw data is employed.

4.11 Interviews and site visits with Traditional Owners

As stated in Chapter 2 and 3, while ethnographic information pertaining to western Queensland, Cape York, and the eastern coastal fringe of Queensland has been documented, large sections of the semi-arid interior of north Queensland have had minimal research. Prior to this project, there had been little ethnographic study into the groups bordering the Chillagoe limestone formation, in particular the Wakaman community. No ethnographic findings had been published concerning the Wakaman people specifically, and there was a dearth of recorded information pertaining to the cultural practices associated with the rock art sites.

The current Wakaman elders feel that their traditional knowledge concerning the limestone belt had not been fully integrated into prior rock art research. Interviews with Traditional Owners were employed, therefore, in the course of this project, to enhance and supplement the archaeological survey.
Traditional Owners were interviewed both on site and in numerous meetings to record non-restricted traditional knowledge. The interviews with Traditional Owners were conducted with the Wakaman Aboriginal community. This emphasis was chosen because of the three Aboriginal groups with traditional ties to the area (the Wakara, the Kuku Djungan and the Wakaman), no Wakara people were able to be identified, and the Kuku Djungan, while acknowledging that the limestone belt borders their traditional estate, have had extensive archaeological research and rock art analysis at Ngarabullgan, located 50kms to the northeast of Chillagoe, the area over which the Kuku Djungan currently hold native title (e.g. David 1996b, 1998a, 2000, 2004). The Wakaman community, however, has had little documentation of their traditional cultural practices. The Wakaman people expressed a desire to finally have “the true Wakaman story told” (Rodney Chong pers. comm. 2013).

Traditional Owner interviews were conducted in English in both formal and informal contexts over a period of years. Sometimes, meetings were organised, and a list of specific questions were asked regarding a particular, site, motif or traditional cultural practice (always of a non-secret nature). At other points, more informal information was gathered in a variety of contexts in the course of conversations and site visits. There was continual contact between the researcher and the Wakaman community throughout this project, with weekly emails, phone conversations or personal meetings. A discussion of the results of these interviews with Wakaman community members is found in Chapter 6. The Wakaman community also requested that certain aspects of the rock art assemblage be investigated further (e.g. the geographic distribution of certain motif types across the limestone belt), so the project evolved with input from both the Wakaman community and the researcher. This project was a collaborative investigation which served both research and community needs.

4.12 Conclusion

This chapter has outlined the framework of archaeological theory underpinning this project and the methodology used to record and analyse the Chillagoe-Mungana rock art assemblage. The next chapters detail the results generated from the fieldwork and discuss the significance of the Chillagoe-Mungana rock art at the local and regional level.
Chapter 5 Fieldwork Results

5.1 Introduction and survey sections overview

This chapter presents the results for the fieldwork undertaken for this project. While each individual site’s description and motif catalogue, as well as other site specific information, is outlined in Appendix 2 to this thesis, this chapter focuses on the six survey sections, summarising the results for the group of sites located within each survey subdivision. The chapter begins with an overview of the six sections, their position in the physical landscape and their location relative to any natural or modern features which may impact the type of results gathered. The results for all the sites in each survey section are then collated according to the hierarchical classification system established in Chapter 4, allowing for a comparison of the findings.

The Chillagoe-Mungana limestone belt contains 46 reportable sites and 2142 motifs. An additional three restricted sites are also located in the area, bringing the total to 49 sites, but the motif catalogues of the secret sites are not detailed in this document for reasons of cultural sensitivity.

As outlined in Chapter 4, this PhD divided the limestone belt into six survey sections, each section containing a parcel of land approximately 10km$^2$, positioned either on the eastern or western side of the Burke Development Road which serves as an approximate southeast-northwest central axis (see Figure 5.1). The six survey sections are not uniform, however. Each parcel encapsulates a varying number of individual karst towers depending on the natural geology of the Chillagoe formation which in turn yield a variable number of rock shelters, caves and suitable rock art production surfaces. Nevertheless, all the survey sections encompass a roughly equivalent geographical area.

As discussed in Chapter 4, during fieldwork it was not possible to examine every karst, although a majority of the individual towers in each survey section were investigated. Further survey work will likely yield more sites, but the findings discussed in this chapter, combined with results from earlier studies (presented in Chapter 3), provide a representative sample for analysis.
The CE survey section begins at the southern end of the limestone belt, stretching away to the east from the Burke Development Road, encompassing all sites from the southern extreme of the limestone karst until just north of the present day Chillagoe township where there is a natural break of the limestone formation. The CE section houses multiple marble quarries, some still active, which generally involve open pits, but whole or partial towers have been destroyed in several areas due to mining activity. CE incorporates a number of seasonal creeks and the semi-permanent Chillagoe Creek which runs through the northern part of the survey area.

The majority of the towers within this survey region were checked during fieldwork. This survey section also contains one previously excavated cave, Pillar Cave (CE 01) (see Chapter 3.4). While the geology of this survey section is predominately limestone karst, the southernmost formations present as granite conglomerate towers, with three sites (CE01-03) located within the conglomerate zone.

The CE survey section contains 11 rock art sites and a total of 1029 (1021 Determine and 8 Indeterminate) motifs. This motif count is the highest amongst all of the six survey areas, and it represents 48% of all the motifs in the Chillagoe assemblage.

5.3 Site distribution in the landscape

The CE survey section has the third highest site/km² density of the six survey sections (1.1 sites/km²), and the highest overall motif count of the Chillagoe assemblage. Sites in
this survey section appear as focal points of rock art production in the landscape, usually with one central site, with a high motif density per panel (e.g. ≥ 35 motifs/panel) surrounded by several satellite sites with smaller motif counts (≤ 10 motifs/panel) in close proximity (generally less than a kilometre distant). The central sites may have up to 5 panels of rock art, while the satellite sites generally have only a single panel of motifs. In the CE section, three of these major rock art groupings or site complexes occur, with gaps of approximately 6 kilometres of seemingly archaeological sterile landscape between each cluster.

The three concentrated areas for rock art production are distributed throughout the survey section: a grouping of three sites, CE01-03, lies at the southern geographic extreme of the limestone belt; the complex of CE04-08 is located in the central section; and another major site, CE22, stands isolated further north (see Figure 5.2).

Figure 5.2 CE site complexes (approximate locations)

The most southern site grouping (CE01-03) is situated at the south-eastern end of the Chillagoe formation. CE01-03 are clustered in close geographic proximity, aligned east to west approximately 100m apart, with the main cave, CE01, positioned on the eastern edge of the formation. CE01 has 37 visible motifs in several superimposed layers, and archaeological excavations at this site indicated that occupation dates to about 1940 years BP (Mardaga-Campbell 1986, see Chapter 3.4).
The next rock art focal point occurs 5.75km further north, a group of five sites, CE04-08, located on two adjacent large karst towers. The main site in this complex, CE04, contains the majority of the motifs, 268 examples (mainly engravings), while the four satellite sites exhibit lower motif counts: CE05, 37 motifs; CE06, 9 motifs; CE07, 5 motifs; and CE08, 3 motifs.

The third major rock art concentration lies 6.1kms further north again, at a single site, CE22. Although it has no associated satellite rock art sits, CE22 encompasses the highest motif count in the CE survey section (644 motifs in total).

The remaining two sites, CE09 and CE32, do not fit this general pattern, however. These two sites sit separated from the main site groupings, and both have low motif counts (6 motifs at CE09, and 10 motifs at CE32). CE32 lies on the northern boundary of the survey section, and CE09 is the most eastern site recorded. Both sites consist of a few motifs placed in a narrow, exposed shelter on a small karst tower. CE09 stands isolated on the eastern edge of the survey area, and CE32 is situated north of Chillagoe Creek on one of the last towers before the natural break between the CE and ME survey sections.

Of the total 1029 motifs, 1021 are Determinate and 8 are Indeterminate. Seven of the Indeterminate motifs are present at the major site, CE01, and the other Indeterminate motif is located at CE07.

### 5.4 CE production techniques

<table>
<thead>
<tr>
<th>Site</th>
<th>Painting</th>
<th>Drawn</th>
<th>Stencil</th>
<th>Engraving</th>
<th>Print</th>
<th>Combination</th>
<th>Totals</th>
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<td>1.0%</td>
<td>1029</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

Total # of motifs | 79  | 8   | 3   | 938 | 1 | 1029 |
% of total        | 7.7%| 0.8%| 0.3%| 91.1%| 0.1%| 100% |
Engravings

The largest relative motif count consists of engravings (938 motifs or 91.1%), though engraved motifs are not widespread, occurring in less than half the sites (5 sites or 45.4%) (see Figure 5.3). All three types of engraving are found: shallow, deep and abrasion. Two sites, CE04 and CE22, have a high concentration of engraved motifs, with 246 and 637 motifs respectively. In addition, two other sites, CE06 and CE32, contain only engravings. No other techniques are present. The engravings in the CE survey area are primarily deeply engraved motifs (n=619), though numerous abraded lines (n=309) also occur.

Shallow engravings

Shallow engravings in the CE section are very infrequent, accounting for 1% of all engraved motifs. The 10 shallow engravings, all of which are non-figurative, are located on the outlier site, CE32, on a single panel, with no other motif types present. The shallow engravings take the form of open geometric designs: ‘curved lines’ and a cluster of seven shallow ‘dots’ with little patina.

Deep engravings

The deep engravings of the CE survey area are characterised by a large abundance of cupules. All 619 deep engravings are cupules, located at four different sites, and all are highly patinated, suggesting considerable age. No other deeply engraved motif type is found in this survey section.

While cupules are located at four different sites (36.3%), two sites in particular (CE04 and CE22) have cupules covering large surfaces of the shelter walls and boulders on the cave floors. CE04 has 232 cupules arranged on vertical panels at the rear wall of the shelter, while CE22 has 342 cupules spread across boulders and vertical and horizontal surfaces following the natural contours of the rock surface (see Appendix 2 for specific site details). The concentration of engraved motifs at CE22 represents the largest grouping of cupules and abraded lines located at any site in the Chillagoe-Mungana limestone belt: 342 cupules and 295 abraded lines. This high density of engravings is unusual in north Queensland rock art assemblages.
Two other sites, CE09 and CE05, have fewer examples. CE09 has nine highly patinated cupules arranged in a horizontal line, reminiscent of painted ‘dot series’ in other shelters. CE05, in the same site complex as CE09 and CE04, has 36 cupules. The cupules at these four sites and the associated abraded lines (see below) have not been included in any previous survey of the Chillagoe assemblage.

**Abrasions**

Associated with the deeply engraved cupules at two sites (CE04 and CE22) are a number of abraded lines (309 examples). In CE22, in particular, the abraded lines and the cupules are directly juxtaposed, with the majority of the abraded lines arranged around the edges of the cupules, though never bisecting the deeper pits. At CE04, the abraded lines are positioned adjacent to two large vertical panels of cupules (see Appendix 2 for details). The large number of abraded lines appear mostly in sets of two parallel lines (both horizontal and vertical in orientation,) though groupings of 4 to 5 lines also exist, and all are highly patinated. The abraded lines’ superimposition on the edges of cupules indicates a later date of production. The lines appear to be made with minimal abrasion, with crisp edges and shallow depth, suggesting that they were not created by repeated rubbing of the rock surface, and they are not the result of tool sharpening activities. Because the abrasions have minimal length and depth, and they are deliberately positioned around the edges of the cupules, they appear to serve a decorative (and perhaps symbolic) purpose, not a purely utilitarian one (see Figure 8.2).

**Stencils**

Stencils in this survey area are very uncommon, comprising only 0.3% (3 examples) of the total motifs. At a single site (CE07), three stencils are positioned on the rear of an exposed alcove at the base of the 0.2km long karst tower which also houses sites CE04 and CE06.

**Drawings**

Drawings too are uncommon, with only 8 examples (0.8%), although they are found at four different sites (36.3%). The drawings are primarily made with black charcoal (7 motifs), though a single motif is produced with a red ochre crayon (at site CE04).
Prints
No prints were created anywhere in the CE survey section.

Paintings
Paintings are widespread, found at 72.7% of the sites, though in numerical terms they account for only 79 motifs (7.7%).

Combination motifs
Only a single combination motif was recorded in the CE survey section, a painted and drawn non-figurative design located at CE01, accounting for 0.1% of all motifs.

5.5 CE Level Two: Figurative - Non-figurative - Tracks - Stencils - Prints

![CE Survey Section Level Two Motif Forms](image)

Figure 5.4 CE Level Two motif forms

Figurative
Figurative motifs are rare in CE, accounting for 0.4% of the total Determinate motifs (4 designs). Figurative designs are located only at two sites in the survey section, CE02 and CE22, and each of the motifs is specific to that particular area. The four examples, all of which are painted, consist of three anthropomorphs and one zoomorphic design. No representations of material culture occur anywhere in the survey section.
Anthropomorphs

The three anthropomorphs, all of the ‘simple’ variety, comprise a single grouping of one larger and two smaller figures, located at a single site (CE02) at the far south-eastern geographic boundary of the survey section.

Zoomorphs

The only zoomorphic motif is a ‘lizard’ variety occurs at CE22, on the rear wall of the open cave.

Tracks

Track designs are rare in the CE survey section (0.1% of the Determinate motifs), with only a single track recorded at site CE01, at the extreme south-eastern end of the limestone belt. The type of track cannot be identified for cultural reasons.

Stencils

As stated in section 5.4, stencils are very rare, with only three hand stencils located at a single site on an exposed panel (0.3% of the Determinate total). All three stencils appear to be adult hands (one left hand and two right hands). One of the stencils is painted in white pigment, the only instance of the use of white for stencilling in the Chillagoe assemblage (it should be noted, however, that a material culture stencil was infilled with white paint in the ME survey section). No other types of stencils appear in the survey area.

Non-figurative motifs

Non-figurative motifs outweigh all other Level Two types, consisting of 1013 motifs, or 99.2%. Non-figurative motifs are also the most geographically widespread; they are found at all 11 sites, with two sites, CE04 and CE22, in particular housing a large concentration non-figurative designs (268 and 643 motifs respectively). Every site in the survey section, however, contains either a painted or an engraved version of a non-figurative design. The breakdown of the individual sub-designs (Levels Three and Four) for the non-figurative motifs is summarised in Appendix 1.2.1.
*Dot and dot variations*

In terms of the specific non-figurative motifs, dot and dot variations are the most numerous, comprising 61.7% of the non-figurative total with 626 examples. All of these dot and dot variations, except for 7 shallowly engraved dots found at CE32, are deeply engraved cupules, making cupules the most frequent motif subtype found in this survey section of the limestone belt (see Chapter 5.4).

*Open geometrics*

Associated with the cupules at two sites are also large groupings of abraded lines, in the category of open geometrics. Open geometrics, both the painted and engraved varieties, make up the second most frequent non-figurative motif type found in the CE survey area. 330 open geometrics are located at five sites in the survey section (32.6% of the non-figurative motifs).

Of the open geometrics, ‘straight lines’, either horizontal or vertical are the most numerous, accounting for 317 designs or 96% of all the open geometrics found. These ‘straight lines’ are produced by both painting and engraving, though engraving by far predominates. There are a total of 309 abraded ‘straight line’ variants, located at two sites, though site CE22, which is also the site of the largest number of cupules, has the greatest number, 295 abraded ‘straight lines.’

*Enclosed geometrics*

Enclosed geometrics occur rarely in the CE survey area (n=18 or 1.8% of the non-figurative total) and are only found at three sites and in three different Level Four forms. The majority of the enclosed geometrics are ‘oval variants’ (14 motifs), though there are a lesser number of 4 ‘circle variants’ and only two ‘triangle’ variants.

*Linear non-figuratives (LNF)*

Linear non-figuratives (LNF) are infrequent though relatively widespread (n= 27 or 2.7% of the non-figurative total). LNFs are found at seven separate sites, and all four subtypes (Level Four) are represented, though the majority of LNFs are of the ‘simple’ variant.
Grid patterns and irregular shapes

Both grid patterns and irregular shapes are very rare (6 motifs each or 0.6%). The grid patterns are primarily ‘rectangle variants’ (5 examples) and all six irregular shapes are ‘simple’ with solid infill.

5.6 Colours

A range of colours was used for making the paintings, stencils and tracks, with monochromatic designs most frequent. Red (30.2%) and white (36.2%) are the two colours chosen most often, followed by yellow (11 examples, 13.2%) and black (9 motifs, 10.8%). Light brown occurs in only four times, and orange only as a single motif. Bi-chrome and tri-chrome paintings are quite rare, with only one bi-chrome motif (red/white) and two tri-chrome motifs (red/white/black) being found across the survey section. These three polychromatic motifs were all found at a single site, CE01. Also of interest at CE01 is a single motif with dot-infilled decoration. This dot-infilled pattern occurs in only one other motif in the Chillagoe assemblage in the ME survey section (see Appendix 1.2.2 for the CE colour chart).

5.7 Summary of the CE survey section

The rock art of the CE survey area is concentrated at three focal points in the landscape, though two outlier sites are also present in the area. The main distinguishing feature of the CE survey section is the predominance of engravings, with 91.1% of the motifs being produced using that technique (see Figure 5.3). While all techniques except for prints are present in CE, engravings, mainly deep cupules and abraded lines, occur in large numbers and concentrations. Paintings are the next most frequent technique employed (7.7%), and the remaining two production methods, combination motifs and stencils, are rare with only a few representations of each technique.

Non-figurative designs are the most numerous and widespread, representing 99.2% of all motifs. The remaining Level Two forms are very uncommon, with less than 5 examples of figurative motifs, tracks and stencils. White and red pigment is favoured for rock art production almost equally.
5.8 The southern survey sections: CW

The CW survey section incorporates 18 sites located on the southwestern side of the Burke Development Road (see Figure 5.1). This survey section encompasses a large section of the Chillagoe-Mungana National Park, covering some of the larger limestone towers (e.g. Royal Arch and the Ramparts) which has helped to protect the cultural integrity of some of the sites. Numerous of the karst towers, however, fall outside the National Park boundaries. At present, some pastoral infrastructure (e.g. tracks, fencing and muster yards) is located on CW as well, and there are at least two active marble quarries. One excavated rockshelter, Walkunder Arch (CW11), is situated within this survey section (see Chapter 3.5), and one permanent spring is sited at the southern end.

The CW survey section consists of 737 motifs (725 Determinate motifs and 12 Indeterminate), the second highest motif count after the neighbouring CE section. The 12 Indeterminate motifs are found at three sites, six of which are painted in red and six are drawn in red ochre crayon.

5.9 Site distribution in the landscape

The CW survey area houses the largest number of sites in the Chillagoe limestone belt (18 sites) resulting in the highest site density at 1.8 sites/km². Similar to CE, there are three principal locations for rock art production. Three major sites (CW12, CW20 and CW25) have the greatest concentrations of motifs (>100 motifs/panel), with each site only having one to two panels in total. These three sites combined account for 67% of the motifs found in the survey section. The remaining sites, with fewer motifs, are all arranged as satellite sites around these main shelters, grouped either on the same tower or in close proximity.

The three nodes of concentrated rock art production activity are distributed throughout the survey section (see Figure 5.5). A site grouping of 9 sites (CW11-CW19) sits at the southern extreme of the limestone belt. Another cluster of two sites (CW20-CW21) is found approximately 6 km further north. Five sites (CW22, 24, 25, 26, 27) are situated another 1.5 km to the northwest. Two isolated sites are also present: CW10 stands alone with no other sites nearby, while CW28 is less than one kilometre from the CW25 site complex. Between each of these loci lie multiple towers with little or no visible rock art.
(although there are suitable surfaces and shelters). The three main focal points in the landscape represent three centres of rock art and associated ceremonial and occupation activity, with buffer zones of area (seemingly not utilised for rock art production) in between.

Figure 5.5 CW site complexes (approximate locations)

**5.10 CW production techniques**

CW exhibits the greatest range of rock art production techniques found in any of the six survey sections, with all six techniques (painting, drawn, stencil, engraving, print and combination) represented. The majority of sites in this survey section (8 sites or 44.4%) only have a single production technique employed, and the remaining sites generally display either two or three production types in various combinations. Only two sites, CW20 and CW25, exhibit four different production techniques. These two sites also contain the greatest concentration of motif types. No site has the full range of all six techniques (see Figure 5.6).

**Engravings**

Similar to CE, engraving is the most frequent production technique, comprising 55.2% of the total motifs (407 designs). Engravings are also relatively widespread, recorded in 8 sites across the survey section (44.4%). Engravings usually accompany painted
motifs, except at two sites (CW21 and CW26), where engraved motifs (abraded lines) appear as the sole technique.

The CW survey section possesses the greatest range of engraved motif types anywhere in the limestone belt, with a variety of non-figurative subtypes represented. Unlike the CE survey area, where the engravings consist almost exclusively of cupules and abraded lines, in CW, the engravings take various forms.

**Shallow engravings**

Of the three engraving types, shallow engravings occur the most infrequently, 3.9% of the total of engraved motifs, only at two sites in the northern and southern end of the survey section. The 16 shallow, unpatinated engravings are comprised of five non-figurative Level Three sub-categories, and a range of Level Four types including ‘dots’, ‘grids’, ‘combs’ and ‘crescents’, ‘straight lines’, ‘t-shapes’ and ‘other LNFs’. Two shallowly engraved tracks also occur in this survey section, the only two shallowly engraved track motifs in the Chillagoe assemblage (see Appendix 1.3.2).

**Deep engravings**

Deep engravings are more common (10.3% of all engravings), and they show the greatest range of forms in the Chillagoe assemblage. Of the 42 deep engravings found, almost half are cupules (20 motifs at two sites), but three other deeply engraved motif types also occur, both figurative and non-figurative. In terms of non-figurative designs, at CW11, ten deeply engraved ‘stars’ are placed on the rear wall of the shelter, the highest concentration of this engraved motif type anywhere. It is also interesting that this ‘star shape’ is echoed in paint at the same site. Watchman and Hatte (1996: 90) dated the gypsum oxalate crust overlying one of the engraved stars using laser AMS $^{14}$C dating, obtaining a date of 7085 ± 135 years BP (see Chapter 3.17).

The presence of two deeply engraved figurative designs is also very unusual, with only the RW survey section displaying any other figurative deeply engraved motifs (see section 5.14 for a discussion of these figurative engravings).

**Abrasions**

Abrasions are the most abundant engraving type, consisting of 85.8% of all the engravings recorded. Abrasions (n=349) occur at seven sites in the CW survey section,
often together with other engraved designs (such as cupules or stars), but also at two sites as the sole motif type in the shelter. Abraded ‘lines’ are the most common motif type (346 examples). In addition, three abraded tracks are also located at CW25, the only examples of abraded tracks in the Chillagoe assemblage. Abraded lines are found in the greatest concentration at two sites in particular, CW20 and CW25, with approximately 150 motifs on each panel. The abrasions vary in terms of differential weathering and patination, with some appearing highly patinated (and potentially older), and others appearing quite ‘fresh,’ possibly suggesting that this type of rock art was produced over an extended period of time in the region.

**Painting**

Painted motifs, the second most frequent production type, are the most widespread occurring at the majority of sites (10 sites) and comprising 26.9% of the total motif count. Four sites (CW10, CW14, CW24 and CW27) possess only painted motifs, and the remaining sites all have multiple techniques present.

**Stencils**

The CW survey section has the greatest number of stencils in the Chillagoe assemblage. The 101 stencils, spread across four sites, encompassing 13.7% of the total motif. Two sites, in particular, CW16 and CW17, contain a large concentration of stencils, 95 individual motifs, with the other two sites (CW18 and CW22) having a few examples each (2 and 4 motifs respectively) (see section 5.12).

**Drawn**

Drawn motifs in CW are relatively rare. Although they are found in 5 sites, they only consist of 3.4% of the total motif count (n=25). One site (CW25) has the greatest concentration of drawings, with 16 examples. The drawings are primarily produced in black charcoal.

**Prints**

CW is one of only three survey sections which includes prints. Two sites (CW19 and CW28) exhibit prints, with three examples in total (0.4% of the Determine motifs). CW19 is unusual as it has prints in isolation, with no other motif types or production techniques on the rock art panel. Most the prints in this survey section either feature
palms (2 examples, 66.7%), although there is also a single fingertip print (33.3%) found in association with painted non-figurative motifs at CW28.

**Combination motifs**

Similar to CE, the most infrequent motif production technique is combination (0.4%), with only three combination motifs found at two separate sites. Two motifs combine painting and engraving, and one motif is made from a drawn and painted design.

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<th>Stencil</th>
<th>Engraving</th>
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</table>

*Figure 5.6 CW production types and motif counts/site*
5.11 CW Level Two: Figurative - Non-Figurative - Tracks - Stencils - Prints

Figure 5.7 CW Level Two motif forms

**Figurative motifs**

Figurative motifs are very infrequent, with 7 figurative motifs at four separate sites across the survey section (1.0% of the Determinate total). Similar to the CE section, these figurative designs are localised (see Figure 5.7).

**Anthropomorphs**

Anthropomorphic designs comprise 57.1% of the figuratives documented, but the overall motif count is very low, with only 4 examples located at three sites (CW11, CW13 and CW20). One anthropomorph, at CW11, is of the ‘simple’ variety, while two found at CW 20 are ‘complex’. There is also an engraved ‘body part’ representation of a human hand found at site CW13.

**Zoomorphs**

Zoomorphs are also very rare, with only two motifs, one ‘other’ (unidentifiable) and one ‘echidna’ present at two sites in the southern end of the survey section. The ‘echidna’ painting is the only example of this animal form anywhere in the Chillagoe-Mungana region, and the ‘other’ zoomorphic form is created from the modification of a natural rock formation by engraving eyes and a mouth, suggestive of an animal’s facial features.
**Material Culture**

A single representation of a ‘material culture’ object is located at CW25: a large bi-chrome ‘club’ motif. This ‘club’ motif is unusual because it represents the only material culture item motif depicted in any of the six survey sections. It is placed prominently on the panel, superimposed on potentially older motifs produced by painting and drawing. One of the charcoal drawings underlying this motif was dated to 2056 ± 81 BP (David 1992a, see Chapter 3.16).

**Non-figurative motifs**

Similar to the other five survey sections, non-figurative motifs dominate the designs, represented by 584 examples or 80.6% of the Determinate motifs. Non-figurative motifs are also the most geographically widespread, appearing in the majority of sites (13 sites or 72.2%). All six Level Three sub-types are present in the survey area (see Figure 5.7 and Appendix 1.3.2).

**Open geometrics**

Open geometrics occur the most frequently; 403 (69%) of the non-figurative motifs are of this type. The majority of the open geometrics are made up by 366 ‘straight lines’ (vertical and horizontal) and 17 ‘parallel line’ sets, both painted and abraded. The highest concentration of open geometrics is found at two sites, CW20 and CW25. Out of the 318 straight lines present at these two shelters, 305 (96%) are abraded. ‘Curved lines’ and ‘tally marks’ are present in much smaller numbers (8 each), and there are four ‘t-shapes.’

**Linear non-figuratives (LNF)**

The next most frequent category of non-figurative designs is LNF (n=66), comprising 11.3% of the non-figurative motifs found at ten different sites.

**Enclosed geometrics**

Enclosed geometrics (55 examples or 9.4%) are less abundant. Of the three sub-types recorded, ‘oval variants’ dominate (36 motifs), followed by ‘circle’ and ‘crescent’ variants.
**Dot and dot variations**

This non-figurative subtype represents 7% (41 motifs) of the non-figurative designs, made up of both 20 engraved cupules and 21 painted ‘dot series.’

**Grid patterns**

Grid patterns are an infrequent occurrence in CW. All 14 examples are ‘rectangle variants.’

**Irregular shapes**

Of the five examples of irregular shapes (0.9%), four designs are ‘simple’ and one is ‘complex.’

**Tracks**

The CW survey section encompasses the greatest number of track motifs in the Chillagoe assemblage. A total of 29 track motifs occur in this survey section, 4% of the Determinate motif count, at four sites. The majority of the track motifs (20 designs) are concentrated on the ceiling of site CW10, eighteen of which are in a print trail – the only print trail recorded in the karst. An additional two tracks are associated with a non-figurative motif.

The Traditional Owners have given permission for the tracks at site CW10 to be identified as dingo tracks, since they have been named in previous publications (see Watchman and Hatte 1996; Ellwood et al. 2013). These dingo tracks are the only occurrence of this type of track in any survey section.

There are six additional track motifs at three other sites in the survey section (CW15, CW22 and CW25). Because the tracks at these three locations carry totemic associations, they cannot be identified for cultural reasons. The tracks at these sites all occur in low density (≤ 6 examples at each site, with CW15 and CW2 only having one and two motifs respectively).

**Stencils**

Stencils make up 13.7% of the total motif count (14% of the Determinate motifs) in CW, a higher percentage than in the all the other survey sections. A large number of
stencils (101 motifs in total) are found at four sites, with two sites in particular (CW16 and CW17) having the greatest concentration of stencils present, with 43 and 52 examples respectively. The other two sites (CW18 and CW23) contain a few motifs, both only hand stencils, with two and four stencils each.

No other motif types are present at the two chief stencil sites, CW16 and CW17. The stencils are located at the rear of the caves, positioned on the back wall and phreatic pendants in the semi-dark twilight zone. Aboriginal people would have used an additional light source (e.g. fire) when creating the images because sunlight does not penetrate far enough to provide sufficient illumination to produce the motifs. The significance of rock art located in the twilight and dark zone sections of caves is examined in Chapter 6.

*Hands and arms*

The majority of the stencils in CW are of hand and arms, 92 motifs (91% of the total number of stencils), and these images are predominately depictions of left hands (95.6%). There are a number of images which include the forearms as well.

*Material culture*

CW17 and CW16 combined represent the largest concentration of material culture stencils anywhere in the six survey sections. At CW17, eight material culture stencils are present (7 baler shell pendants and one club stencil), while at CW16 there is a single stencilled boomerang, one of only two such images in the Chillagoe assemblage (the other is situated at ME34).

5.12 Colours

Nine different colour and colour combinations are used across the survey section, the second greatest palette range of the Chillagoe assemblage. Monochromatic paintings predominate, with white having the highest overall motif count, used in 155 motifs (48.9%) at 6 sites. Red designs, however, are the most widespread, found in 14 sites with 131 individual examples (41.3%). Additional colours were used infrequently, with black occurring 16 times in 6 sites and yellow being employed in 4 motifs at two sites. Orange appears only once.
Polychromatic motifs are also rare. There are 7 bi-chrome (red/white) motifs found at three sites, representing 2.2% of the total motif record. A single occurrence of red/black, black/white, and red/white/black motifs are all present in a single site, CW25, which has the greatest range of overall colours - nine different colours or colour combinations are present. However, this fact is perhaps unsurprising as CW25 also has the highest overall motif count (see Appendix 1.3.1 for CW colour chart).

5.13 Summary of the CW survey section

The CW section consists of the largest number of sites in the Chillagoe limestone belt, and these sites are concentrated in three main clusters spread throughout the landscape. The CW section features the greatest range of production techniques and the most variety in engraved motif types. Painting, predominately in red and white, is the most widespread of the production techniques utilised, but engraved designs are the most numerous. As with the other survey sections, non-figuratives dominate the motif catalogue, but CW is differentiated from other areas by its high number of track and stencilled designs. Stencils, in particular, are notable in CW, since the area houses the most stencils of hands and material culture items in the entire Chillagoe assemblage.

5.14 The central survey sections: ME

The ME survey section encapsulates 12 sites, some within the National Park boundaries and one rock art site (ME33) is signposted and open to the public. One grouping of the karst towers is also designated for recreational caving use (with a permit). The ME section encompasses a larger number of limestone towers than its counterpart, MW, but it has been minimally impacted by mining and quarrying activity. One cave, Echidna’s Rest (ME43), has been excavated (see Chapter 3.7), and direct dating of motifs has been undertaken at two sites, ME43 and ME33 (see Chapter 3.16).

Several of the caves in this section are known to hold water in underground caverns, and the Walsh River tracks just to the east of the survey section, a source of perennial water (except in extreme drought).

The survey section contains 249 motifs in total: 220 Determinate motifs and 29 Indeterminate. There are two sites, ME37 and ME40, which have only Indeterminate motifs (two at each respective site).
5.15 Site distribution in the landscape

The 12 rock art sites in ME represent the second highest site density in the Chillagoe assemblage at 1.2 sites/km². Similar to the other survey sections, rock art production in the ME area is concentrated at several focal points in the landscape with zones of no visible rock art, or only small assemblages (< 20 motifs/panel), in between (see Figure 5.8).

![Figure 5.8 ME site complexes (approximate locations)](image)

In ME, there are five centres of activity, but the greatest concentration of rock art motifs is at two chief site complexes: ME33-35 and ME37-39. ME’s primary site grouping consists of three sites, ME33-35, all of which are aligned a few hundred metres apart on a large karst tower. These three sites combined account for 44.6% of the total motifs in the survey area. The other principal point for rock art production is at ME37-39. These three sites are slightly different than other rock art nodes, however, because two sites are located on the exterior of the tower, while the third is positioned in a dark interior chamber. Their access points are within 50 metres of each other. Together the three sites, ME37-39, comprise 34.5% of the total motifs of the ME survey section. These
two loci of concentrated activity are positioned on the two largest karst of the area, approximately 750 metres from each other.

The remaining six sites have lower densities of motifs, and they represent smaller clusters of rock art production activity. Another focal point exists at ME43, a single cave, with 10% (25 designs) of the total motif count. ME43 is separated from the other sites, approximately 2.5 kilometres away. The fourth rock art node is composed of a cluster of three sites, ME29-31, which are arranged around the base of an isolated small karst tower, each with a small motif count. Near to that complex, the final rock art concentration is at ME42, a large open site 0.7kms distant. A single outlier site is encapsulated in the ME section as well, ME40, but this site has only two Indeterminate motifs.

5.16 ME Production techniques

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<tr>
<th>Site</th>
<th>Painting</th>
<th>Drawn</th>
<th>Stencil</th>
<th>Engraving</th>
<th>Print</th>
<th>Combination</th>
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<td>27</td>
<td>6</td>
<td>249</td>
<td>100%</td>
</tr>
</tbody>
</table>

% of total | 67.5% | 15.3% | 3.6% | 0.4% | 10.8% | 2.4% | 100% |

*Figure 5.9 ME production types and motif counts/site*

**Painting**

Painting is the technique utilised most widely throughout the ME section, occurring at the majority of the sites (83.3% or 10 sites in total) with only two sites, ME31 and ME43, exhibiting no painted designs at all (although both of those sites contain stencils). Painted motifs dominate, with 168 or 67.5% of images being produced through painting, a clear preference over the next most common technique employed, drawing, which accounts for only 15.3% (38 motifs) (see Figure 5.9).
**Drawn**

Drawing, as stated above, occurs the next most frequently. However, drawing is limited only to a small number of sites and a small overall motif count. Drawing occurs at three sites (25%), and drawn motifs comprise 15.3% of the total motifs (38 examples) found across the survey section. In fact, drawing is mainly confined to two sites in particular, ME33, which contains 12 drawings, and ME43, which has 24 drawn motifs. Those two sites account for the majority of drawings throughout the survey section (95%), with only one other site, ME34, possessing any drawn designs, but registering only two examples. Drawings are mainly done in black charcoal, although ME33 does have a single example using red ochre crayon. Red ochre crayons are also used in several of the combination motifs. ME43 is unusual in the Chillagoe assemblage as it is consists almost solely of charcoal drawings, with only a single hand stencil.

Several of the charcoal drawings at two sites (ME33 and ME43) have been radiocarbon dated. The oldest motif dated at ME43 was 840 ± 70 BP, and the single motif targeted at ME33 returned a date of 3350 ± 350 BP (Armitage et al. 1998; David et al. 1999; see Chapter 3.16).

**Stencils**

Stencils account for only a small percentage of motifs produced in the ME survey section (3.6%), with only 9 stencils documented at four different sites. The stencils present fall into the low density count category; they all occur in frequencies of ≤ 5 motifs/site, usually as single iterations or in small groups. The greatest concentration of stencils (5 motifs) occurs at site ME31, where all five stencils are of hands, with at least two of the stencils being very small in diameter across the palm, perhaps being children’s. The other three sites, ME34, ME35 and ME43, only have a single hand stencil positioned centrally on the rock art panel (see also section 5.19).

**Engraving**

The main distinguishing characteristic of the ME survey area is that engravings of all types (shallow, deep and abraded) are extremely rare (0.4%), with only a single shallowly engraved motif recorded. This lone shallow engraving is sited away from the major site complexes, on the isolated tower which houses the minor sites of ME29-31.
No deeply engraved motifs were documented at any of the 12 sites, and abrasions were only found as part of a single combination motif (together with painting) on the main panel of ME33. These two engraved motifs are the only engraving activity noted in the ME survey section. This virtual absence of engravings of all types is significant, as it presents differently to the other survey sections, particularly CE, CW and MW.

Prints

While prints are rare in the rest of the Chillagoe assemblage, being found only at 4 sites in total, the ME section is the exception, with one site, ME39, in particular not following the general pattern. Prints in the ME section comprise 12.2% of the Determinate motifs, making prints the third most frequent production technique, a greater percentage than in any other survey section. ME39 is an unusual site in another respect, not only does it have the highest concentration of prints at any surveyed site (27 examples), but also it is the only site surveyed to date where rock art is placed in the full dark zone of an internal chamber of a limestone tower (see also Chapter 6).

As described in Appendix 2, the 27 prints of the site ME39 are either of palm and fingertips. Of the hand (palm) prints, one is complete, and two are partial. The fingertip prints (24 motifs, 88.8%) range from single prints to various groupings, arranged in clusters or vertical rows. In several motifs, the fingers appear to have been dragged vertically or along the surface of the panel, creating elongated smears. There are also eleven non-figurative painted motifs at this same site, and all the motifs are created in red ochre.

Combination motifs

Combination motifs also are relatively scarce, accounting for 2.4% of the total production techniques, with 6 examples at two sites. The majority of combination motifs (n=5) are on the main panel of ME33, which, unsurprisingly, also contains the largest overall total motif count. Four of the five combination motifs at ME33 combine painting and drawing, and only one is produced by painting and shallow abrasions. The sixth combination motif is at a nearby site, ME34, a single motif made from painting and drawing.
5.17 ME Level Two: Figurative - Non-Figurative - Tracks - Stencils - Prints

Figure 5.10 ME Level Two motif forms

Figurative motifs

Similar to other sites in the Chillagoe district, figurative motifs are rare. Figurative designs make up 4% of the Determinate total (see Figure 5.10). Nine figurative motifs were recorded at three sites in the ME survey section, and they are split almost evenly between anthropomorphs and zoomorphs. The greatest concentration of figurative motifs is at ME33 (n=5, 55.5%), with two ‘simple’ anthropomorphs and three ‘snakes,’ located on the main panel and smaller side panels. The rest of the figurative motifs are spread over two sites, ME30 and ME38, but they are only occur in very low numbers (one at site ME30 and three at site ME38).

Anthropomorphs

Of the five anthropomorphs present in the survey section, three are of the ‘simple’ variety and two are ‘complex.’ No ‘body part’ representations occur in ME. As stated above, two of the ‘simple’ anthropomorphs are present on the same panel, prominently positioned. The remaining three anthropomorphs are located at ME38, which is an unusual site not only because of the prominence of the three anthropomorphs, but also because all the motifs are produced in red pigment, with no other production types or colours utilised. The three anthropomorphs at ME38 also exhibit various orientations and complexity levels, ranging from one ‘simple’ upside down figure, to two ‘complex’
figures (one vertically positioned, and another with head down). Both of these ‘complex’ anthropomorphs have distinct fingers and toes, and one design is composed of a central figure and two associated smaller figures seemingly attached. This grouped form of ‘complex’ anthropomorph is found at only one other location in the Chillagoe limestone belt at CE02.

**Zoomorphs**

Zoomorphs rarely occur in the ME survey section, with four examples at two sites (ME30 and ME33). Three ‘snake’ varieties adorn on the central panel at ME33. These ‘snake’ motifs are the only snake varieties anywhere in the Chillagoe assemblage.

The only other zoomorphic motif is at ME30, the only motif at the site. Interestingly, this zoomorphic design appears to represent a winged animal (classified as ‘other’), possibly a moth/butterfly/or bat (see Appendix 2). The solitary motif is positioned prominently over a hole in the exterior tower wall which can be climbed through to access two dark internal chambers. The rear chamber is fully dark, and, at the time of surveying, bats (a type of taphozous) were roosting there, hanging in a similar position (with heads up) reminiscent of the motif outside. As with the ‘snake’ motifs, this zoomorphic motif is the only example of its type anywhere in the six survey sections.

The zoomorphic varieties are unique to the ME survey section.

**Non-figurative motifs**

Similar to other survey sections, non-figurative motifs predominate in ME, comprising 173 designs or 78.6% of the overall Determinate motifs. Non-figurative motifs are also the most geographically widespread Level Two type, found at 8 sites (66.6%) in the survey area. Three sites in particular, ME33, ME38 and ME43, have high concentrations of non-figurative motifs, with the three sites totalling 71% of the non-figurative motifs.

All sub-types of non-figurative motifs are represented in the ME survey section, except for dot and dot variations, which do not occur anywhere (see Appendix 1.4.1).

**Enclosed geometrics**

Enclosed geometrics are the most prevalent (51 motifs, 29.4%). The enclosed geometrics only occur in two categories, ‘oval’ and ‘crescent’ variants. ‘Oval’ variants
represent the majority, 43 examples. These ‘oval’ variants are the most common Level Four sub-type of non-figurative designs depicted in the ME survey area.

**Linear non-figuratives**

Linear non-figurative motifs (46 motifs, 26.5%) are the next most common Level Three category found in ME, and they occur in all four Level Four variations, though ‘star shapes’ account for the majority (33 examples). These ‘star shapes’ are the second most prevalent non-figurative Level Four designation (after ‘oval’ variants) overall.

**Open geometrics**

Open geometrics (36 motifs, 20.8%) are less common, being found in only four different Level Four categories, mainly consisting of 16 ‘straight line’ or 14 ‘parallel line’ forms. A very small number (n=5) of ‘curved lines’ and a single ‘t-shape’ are also present.

**Grid patterns**

Thirty grid patterns (17.4%) occur in ‘rectangle’ variations (28 motifs), though two ‘oval’ grids exist.

**Irregular shapes**

Irregular shapes (10 designs, 5.8%) are the least frequent Level Three non-figurative sub-type in ME. Most of the irregular shapes (9 motifs) take the form of ‘simple’ shapes with irregular outlines with solid painted infill. There is, however, a single ‘complex’ irregular shape at ME33, which has an irregular outline, with a bisecting line and dot-infill.

**Tracks**

Similar to most survey sections, track designs are rare. Only two tracks found at two sites, or 0.9% of the Determinate motifs. At each site, a single track is positioned prominently on the panel.

**Stencils**

Stencils are very uncommon in the ME area, with only 9 examples documented, or 4% of the Determinate motif total.
**Hands and arms**

The majority (8 motifs, 88.8%) of the stencils in ME are of hands. Five hand stencils were recorded at a single site, ME31. Several of these motifs appear to be children’s hands due to their small size, and two left hands are able to be distinguished. The three other hand stencils occur singly at three other sites: a left hand at ME34; a right hand at ME35; and a left hand at ME42.

**Material culture**

A lone material culture stencil of a ‘boomerang’ was stencilled in red and infilled with white paint. It is located adjacent to a hand stencil and other painted non-figurative designs at site ME34. This motif is the one of only two ‘boomerang’ material culture stencil sub-types in the Chillagoe assemblage; the other is at site CW16.

**Prints**

As described in section 5.18, the presence of a large group of prints in a fully dark cave is a significant distinguishing factor of the ME survey section and the Chillagoe assemblage as a whole. Very few dark zone rock art sites have been discovered in northern Australia. The prints at ME39, deep in an internal chamber, represent a significant find, the implications of which are discussed in Chapter 6.

**5.18 Colours**

The greatest range of colours and colour combinations are used in the ME survey section of any part of the Chillagoe assemblage. Eleven different colours create 219 pigment-based motifs at 10 sites. Similar to the other survey sections, monochromatic motifs dominate. Red is the most prevalent colour choice, 38.3% of all motifs, and it is used the most widely, throughout ten sites. White and black follow closely, with 17.3% and 16.8% each. Interestingly, the bi-chrome combination of red/white is also present in a relatively large percentage, 27 motifs, or 12.3%, a greater amount than elsewhere in the six survey sections. Orange was the next most frequent colour choice, with 18 or 8.2% of all coloured motifs, but all 18 orange images were located at a single site, ME38. Yellow is used infrequently, only 9 examples occurring (4.1%) at three different sites. The remaining single colours and bi-chromes all are present in very small numbers. Single motifs (0.5%) in blue, white and black, and white and orange all were
recorded at ME33, as well as two (1%) yellow and black combinations. The lone blue motif was the only one documented in the karst. No tri-chrome motifs were recorded in the ME survey area.

The range of colours used at a single site is generally small, though ME33, ME34 and ME38 are the exceptions. ME33, in particular, differs from the other sites in terms of the colours used, exhibiting the greatest range of colours selected, with 9 of the recorded 11 colours or colour combinations being found on the central panel at that site. ME33 also has the largest total of motifs recorded at any site (n=69), so this extended colour palette is perhaps to be expected.

The other sites in the ME survey section, however, do not follow the same pattern. While ME34 and ME38 display 54.5% (6 different colours utilised) and 36.3% (4 colours) of the colour range respectively, the other sites usually have no more than three colours on a panel, and at four sites (ME29, 30, 31, 39) the painted motifs are produced entirely in monochromatic red.

The paintings are produced either with no-infill, solid colour or with internal stripes. Only one example of a dot-infill design is found, again on the main panel of ME33. This type of dot-infilled decoration is only recorded once elsewhere in the Chillagoe formation, a single non-figurative motif at one site in the CE survey section (see section 5.7 and Appendix 1.4.2 for the ME colour chart).

5.19 ME summary

The ME survey section differs from the rest of the Chillagoe limestone belt, primarily due to its lack of engravings, the greatest range of colours and the highest number of prints found. All production techniques are in evidence across the survey section, though stencils, engraving and combination motifs are relatively scarce. Similar to other survey sections, non-figurative designs are prevalent, and motifs are mostly painted in red pigment. The presence of rock art in the dark zone is a significant feature of ME.

5.20 The central survey sections: MW

The MW survey section encompasses a relatively small number of karst towers on the western side of the Burke Development Road. Only two sites to date have been
recorded in the survey section, which is heavily impacted with historical town and railroad infrastructure. The ME section also incorporates the former Kagara/Red Dome/Mungana Gold open cut mine, including roads, buildings and fences. Access to the mine site is restricted, though cultural heritage sites within the mining lease were surveyed and cleared during the period when approval for the mine was initially granted. Several of the towers are part of the National Park, and David (1996), Lamb (1996) and Goodall et al. (2009) undertook archaeological excavations and rock art dating at Fern Cave (ME45), and direct dating of several of the charcoal motifs occurred at MW44 (see Chapter 3.6 and 3.16).

Because of the small number of sites recorded in this survey area, the results presented here should be used with caution, and they are most suitable for general comparisons with the other survey regions. The relatively high number of motifs spread across the two sites, however, does allow for some conclusions to be drawn.

At the two sites, there are 93 Determinate motifs and 1 Indeterminate design. The single Indeterminate motif is a red pigment patch at MW44.

5.21 Site distribution in the landscape

![Figure 5.11 MW site complexes (approximate locations)](image-url)

119
This survey section has a low site density (0.2 sites/km²) partially due to the small number of individual towers. Following a similar pattern to the other survey sections, however, although with significantly fewer sites, these two sites represent two distinct focal points for rock art production in the landscape (see Figure 5.11). These two sites are situated on two separate large karst towers, approximately 2 kilometres apart. Although multiple other suitable surfaces and shelters could have been exploited within this survey section, the Aboriginal people chose to concentrate the rock art production in two discrete areas.

5.22 MW production techniques

Engraving

The MW sites demonstrate a technique preference for engraving (52.1% or 49 motifs) (see Figure 5.12). Engraved motifs are found at both sites, although MW44 exhibits a higher concentration of engraved motifs (81.6% of the total engravings, 40 motifs). No shallow engravings are present in the MW survey section.

Deep engravings

Deep engravings were recorded at both sites, the majority of which are cupules (38 pits are found at MW44 and 5 cupules at MW45). Similar to other sites in the Chillagoe karst, the cupules either follow the natural contours of the rock face or are located on boulders on the shelter floor. They are arranged in horizontal or vertical rows, circular patterns or in large clusters. Although the deep engravings are predominately cupules, several other deeply engraved motif types exist at MW45: one highly patinated track; two prong-like motifs (‘simple LNF’); a deep groove; and an engraved ‘star’ design.

Abrasions

Abraded ‘lines’ are very uncommon, only seen on the main panel of ME44 in a small number, 2 motifs. These two abraded lines are positioned near a horizontal row of cupules.

Stencils

Stencilling is the second most frequently employed technique in MW (32 motifs or 34.4% of the Determinate total). The stencils are located at a single site, ME45. The
stencils are all of hand and arms, with several motifs showing closed fists or finger variations. The stencils are produced in red pigment, and the majority are positioned at the rear of the main chamber of the cave, on the edge of the twilight zone, on phreatic pendants which form a barrier between the front of the cave and an almost fully dark rear chamber. These stencils were directly dated by Goodall et al. (2009) who concluded that most were likely produced in the late Holocene, while others in the site were potentially older (see Chapter 3.18).

**Paintings**

Painted motifs are rare, only four exist in the survey section, comprising 4.3% of the total motifs. All the painted motifs are at a single site, MW44.

**Drawings**

Drawings too are infrequent; only 5 drawn motifs are present at the two sites, or 5.3% of the motif totals. The drawn motifs are all created with black charcoal.

**Combination motifs**

Combination motifs occur at a higher frequency (4.3% of the Determinate total) in the MW survey section compared to other areas, though, again, because of the small numbers, the results should be treated with caution. All four of the combined motifs occur at MW44, and all are combinations of painting and drawing.

<table>
<thead>
<tr>
<th>Site</th>
<th>Painting</th>
<th>Drawn</th>
<th>Stencil</th>
<th>Engraving</th>
<th>Print</th>
<th>Combination</th>
<th>Totals</th>
<th>% of Total Motifs</th>
</tr>
</thead>
<tbody>
<tr>
<td>MW44</td>
<td>4</td>
<td>4</td>
<td></td>
<td>40</td>
<td></td>
<td>4</td>
<td>52</td>
<td>55.3%</td>
</tr>
<tr>
<td>MW45</td>
<td>1</td>
<td></td>
<td>32</td>
<td>9</td>
<td></td>
<td>4</td>
<td>42</td>
<td>44.7%</td>
</tr>
<tr>
<td>Total # of motifs</td>
<td>4</td>
<td>5</td>
<td>32</td>
<td>49</td>
<td>4</td>
<td>94</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>% of total</td>
<td>4.3%</td>
<td>5.3%</td>
<td>34%</td>
<td>52.1%</td>
<td>4.3%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 5.12 MW production techniques*
5.23 MW Level Two: Figurative - Non-Figurative - Tracks - Stencils - Prints

![MW Survey Section Level Two Motif Forms](image)

*Figure 5.13 MW Level Two motif forms*

**Figuratives**

No figurative designs occur in MW, a clear difference from the other parts of the Chillagoe formation (see Figure 5.13).

**Non-Figuratives**

Similar to the survey sections CW, CE and ME, non-figurative designs in MW are the most numerous motif type, with 59 examples, or 63.4% of the Determinate total. Five of the six non-figurative Level Three sub-types are present, with only enclosed geometrics not being among the assemblage (see Appendix 1.5.2).

**Dot and dot variations**

The most prevalent type of non-figurative sub-type is the dot and dot series consisting of 43 examples, or 72.9% of the non-figurative designs. The majority of these motifs are deeply engraved cupules.

**Grid patterns**

Grid patterns are the next most common Level Three non-figurative motif, but they are present only in small numbers, 8 designs or 13.6%. The majority of the grid patterns take the form of ‘rectangle variants’ (n=6), though two ‘oval variants’ are also found.
**Linear non-figuratives**

LNFs are numerically rare (6.8%), with only four examples: 3 ‘simple LNFs’ and a single ‘star’ shape.

**Open geometrics**

Open geometrics are also very infrequent, comprising 5% of the non-figurative total, with 3 examples: 2 ‘parallel lines’ and 1 ‘curved line’.

**Irregular shapes**

Irregular shapes are very rare (1.7%). Only a single ‘complex’ irregular shape is present.

**Tracks**

Two track motifs are found in the survey section, one each at each site (2.2% of the Determinate total). While the type of track cannot be identified, it is interesting that the same track type occurs at each site, although at ME45, the track motif is deeply engraved and highly patinated, while at ME44, a similar type of track is produced in red pigment.

**Prints**

No prints are found in this survey section.

**5.24 Colours**

Similar to the other survey sections, the main corpus of the painted visible motifs are produced in a monochromatic palette. Red is the clear first choice for pigment in the MW survey zone, with 79.5% of the painted and stencilled motifs being produced in that colour. Red is used at both sites. A few colour choice differences, however, are present which differentiate MW from other areas of the limestone belt. Interestingly, unlike the other survey zones, white is not used as a single pigment selection; it appears only in combination with other colours. Monochromatic black is present in the charcoal drawings, but it is not utilised in painting at all. Also, unusual for the Chillagoe assemblage, the most frequent colour combination is black/red (rather than the typical red/white bi-chrome motifs found elsewhere). The preference for this colour combination may be a result of the higher number of combination motifs produced by
painting and drawing. There is also a single tri-coloured motif, where red, white and black are used in combination. This use of white as an infill decoration is the only occurrence of white pigment in the survey section (see Appendix 1.5.1).

5.25 Summary of MW

The MW survey section has few sites although a number of suitable karst surfaces exist in the region. Engravings, predominately cupules, characterise the MW assemblage, but a large percentage of stencils are also present in the twilight zone of MW45. Paintings, drawings and combination motifs are uncommon, but red is the primary colour choice for the majority of the painted and stencilled motifs. Interestingly, unlike the other survey sections, white pigment never occurs on its own. Similar to the rest of the Chillagoe assemblage, non-figurative designs surpass all other motif types.

5.26 The northern survey sections: RE

The two most northerly survey sections, RE and RW, are the most problematic in terms of providing rock art records and site information. Not only does the limestone formation begin to taper off as it approaches the Walsh River which forms its northern boundary, with the number of individual towers decreasing rapidly the further north travelled, but the main pastoral holdings of Rookwood Station are in this area and certain access restrictions are in place. These northern survey sections also contain a number of sacred, restricted sites as determined by the Wakaman Traditional Owners. All information regarding these sites is to remain secret, so the number of sites which can be discussed in summary form in this chapter (or in Appendix 2) is reduced. For the aforementioned reasons, the results presented here for RE and RW are too small and unreliable to be discussed without caution. They have been included, however, because they are indicative of some general patterns in the rock art production of the northern region.

The RE survey section encompasses the fewest number of individual karst towers of any of the six survey sections, and it also houses the majority of the pastoral station infrastructure.

The close proximity of the Walsh River is a distinguishing feature of the northern survey areas. A number of open sites positioned along the Walsh River were recorded.
by David (1996) and were mentioned by early European explorers to the area (see Chapter 3.3). While the open sites are not included in this project, it should be noted that the banks of the Walsh River were an apparent aggregation area for habitation and stone tool production in pre-contact times. The proximity of these open campsites to the karst towers may have affected the site use of the nearby caves.

Only one site in the RE survey section can be detailed in this thesis: RE50.

5.27 Distribution of sites in the landscape

RE has the lowest site density of the six survey sections: 0.1 site/km$^2$. While the results of RE are too small to be reliable, it is interesting that the single site, RE50, is located at the most north-eastern point of the limestone belt, at the geological and geographic boundary of the Chillagoe karst formation.

5.28 RE Production techniques

Painting

The single site in the RE contains four figurative motifs painted in red ochre. No other production techniques were utilised in the survey section (see Appendix 1.6).

5.29 RE Level Two: Figurative - Non-Figurative - Tracks - Stencils - Prints

Figurative: Anthropomorphs

The four anthropomorphic motifs are located on the ceiling of RE50. These anthropomorphs are of the ‘simple’ variety, with heads oriented up and solid red infill. These ‘simple’ anthropomorphs are stylistically most similar to the single anthropomorphic design positioned at the southern geographic extreme of the limestone belt at CW11.

5.30 RE summary

The RE section has the least number of sites and motifs of any of the Chillagoe survey areas. It is also unique because it features only red painted figurative designs. The results are so small for this survey section, however, that they are extremely unreliable.
5.31 The northern survey sections: RW

The RW section lies the closest of any survey area to the Walsh River on the boundary of the limestone karst. No towers occur north of the river. As stated in 5.25, the multiple open camping sites along the Walsh demonstrate that occupation activity in this region appears to have been focused along the river banks.

Similar to RE, the RW survey section encapsulates a limited number of karst towers. Five sites are situated in the RW survey zone, but because of the culturally sensitive nature of three of the sites, only two sites can be discussed in this thesis, RW46 and RW47. As with RE, because of the limited number of sites and motifs, the results for the RW survey section reported here are too small to be dependable.

The two sites (RW46 and RW47) possess 29 Determinate motifs.

5.32 Site distribution in the landscape

Similar to the other survey sections, with the exception of RE, the sites located in RW are clustered in three small groups: RW46 and RW48; RW47; and RW49 and RW51. The rock art production and the possible associated ceremonial activities are concentrated in the larger towers of the section, with the site groupings being approximately 1 kilometre apart.

5.33 RW Production techniques

<table>
<thead>
<tr>
<th>Site</th>
<th>Painting</th>
<th>Drawn</th>
<th>Stencil</th>
<th>Engraving</th>
<th>Print</th>
<th>Combination</th>
<th>Totals</th>
<th>% of Motif Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>RW46</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>13.7%</td>
</tr>
<tr>
<td>RW47</td>
<td>17</td>
<td>2</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td>25</td>
<td>86.3%</td>
</tr>
<tr>
<td>Total # of motifs</td>
<td>21</td>
<td>2</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td>29</td>
<td>100%</td>
</tr>
<tr>
<td>% of total</td>
<td>72.4%</td>
<td>6.9%</td>
<td></td>
<td>20.7%</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 5.14 RW production techniques*

Painting

Similar to the ME and RE survey sections, paintings predominate in RW, accounting for 72.4% or 21 motifs. Painting occurs at both reportable sites.
Engravings

Engravings are also present (6 examples or 20.7%), though only in small numbers. Both shallow, unpatinated engraved motifs (3 designs) and deep, highly patinated engravings (3 examples) were recorded in equal measure and in a variety of forms. The engravings are only found at RW47.

Shallow engravings

An engraved depiction of a ‘body part,’ a human hand, is present at RW47. There are also two sets of shallowly engraved ‘dots.’

Deep engravings

Three deep engravings also appear in the form of a grid, a LNF and an open geometric design.

Drawn

Drawings (2 motifs, 6.9%) are uncommon. Both drawings were created with black charcoal.

Stencils

While the specifics of the motifs at the restricted sites cannot be commented on in detail, the restricted sites do contain drawings and engravings (in approximately the same relative frequency). Stencils are also present at a single restricted site as well (RW49).

5.34 RW Level Two: Figurative - Non-Figurative - Tracks - Stencils - Prints

Figuratives

Similar to the other survey sections, except for RE, figurative motifs are rare (n=2, 6.9% of the Determinate motif count). Both of the figurative designs are at RW47 (see Figure 5.15).

Anthropomorphs

Both figuratives are anthropomorphs. One motif is of the ‘complex’ variety, painted in red, with head oriented upwards. The other anthropomorph is an ‘body part’, an
engraved human hand which is similar to the other engraved ‘body part’ design found at the southern end of the limestone belt at site CW13.

![Figure 5.15 RW Level Two motif forms](image)

**Non-figuratives**

Similar to all the survey sections (except for RE), non-figurative designs are the most common motif type found, representing 62.1% of the Determinate motifs (n=18). A range of sub-types are present, with only enclosed geometrics not being represented. All of the non-figurative motifs are found at RW47 (see Appendix 1.7.1).

**Open geometrics**

Open geometric motifs comprise seven (38.8%) non-figurative designs: 4 ‘straight line’ variants and 3 ‘curved lines.’

There is an even distribution across the grid patterns, dot and dot variations and irregular shape subcategories. Each consists of three examples, 16.7% of the non-figurative total.

**Grid patterns**

The three grid patterns are ‘rectangle variants’: two are drawn in black charcoal and one is deeply engraved (16.7%).
Dot and dot variations

There are three ‘dot series’ (16.7%). two of which are shallow engravings and one is painted in white pigment.

Irregular shapes

All three irregular shapes (16.7%) are of the ‘simple’ variety with red solid in-fill design.

Linear non-figuratives

The remaining two motifs are ‘simple’ LNF designs (11.1%).

Tracks

Tracks are the only other motif form that can be reported. Nine tracks are evident in the survey section (31% of the Determinate motifs). The tracks are found at both reportable sites in the survey section, with one site, RW46, only having track designs. The fact that tracks are the sole motif type recorded at both sites illustrates the significance of tracks in the RW survey area.

5.35 Colours

RW uses only a limited palette of colours, with only three monochromatic shades and a single bi-chrome colour combination. Similar to ME, MW and RE, red is the most frequently used colour, occurring in 10 motifs, 43.5%. It is followed closely by white, which is employed in 30.4% or seven paintings. Large bi-chrome motifs, red infill with white outline, are the next most frequent, representing 17.4% of the reportable motifs. Black charcoal crayon was also used to produce two drawn motifs (8.7%) (see Appendix 1.7.2).

5.35 RW summary

Although all production techniques are present in the RW section, with the exception of prints, paintings created in a limited colour range, chiefly in red and white pigment, are the most common. As with all the survey sections, non-figurative designs dominate the assemblage, but a relatively high percentage of track designs is also represented.
Because the RW survey section encompasses a limited number of sites, however, with the majority of them restricted, it is difficult to draw trustworthy conclusions.

5.36 Conclusion

This chapter has presented the results for the six individual survey sections of the Chillagoe-Mungana limestone belt, outlining the stylistic characteristics of the rock art assemblages present within each geographical division. The next chapters build on these results, examining the variations across the entire limestone belt and the significance of the findings.
Chapter 6 The Rock Art Assemblage: Connections and Group Cohesion

6.1 Introduction

The following three chapters (Chapter 6, 7 and 8) discuss aspects of the Chillagoe rock art assemblage, its defining characteristics and its place in the local and regional cultural landscape of north-eastern Australia. Before beginning an examination of the archaeological results of the rock art surveys, however, it is essential to bring in the Wakaman Traditional Owners’ cultural and traditional knowledge concerning the use and significance of the region. The Wakaman traditional insight provides the social, political and ritual context for the archaeological findings (at least for the recent past).

This chapter explores the rock art and archaeological evidence which complements the Traditional Owners’ understanding of the Chillagoe-Mungana limestone belt as being a significant meeting place for local Aboriginal groups in north Queensland. This chapter examines the attributes of the rock art motifs and site types which reflect and indicate that the limestone belt was a centre for ceremony and gathering, a place which promoted group bonding and cohesion. As outlined in Chapter 4.2.4, the information exchange model predicts that certain features of a rock art assemblage will be present in areas where group, rather than individual identity, is emphasised. In regions where group identity is paramount, where cohesion rather than competition is primary, the rock art displays the evidence of shared cultural traits and generic group messaging. In the Chillagoe assemblage, this group interconnection is shown through a variety of rock art motif and site type characteristics. In particular, the ordered distribution of sites in the landscape, the various site types present (and their possible functions), the stencils of material culture items, and the use of certain motifs for signposting and territorial marking all highlight the region’s group bonding aspect.

The features of the Chillagoe assemblage which exhibit individual identity and the forces of regionalisation are discussed in Chapters 7 and 8.
6.2 The Chillagoe assemblage: a summary

As presented in Chapter 5, the Chillagoe rock art assemblage consists of 2142 motifs at 49 sites. This motif count is a minimum figure, however, since it does not include the motifs at the three restricted sites in RW (see Table 6.1).

<table>
<thead>
<tr>
<th>Survey Section</th>
<th>Number of Sites</th>
<th>Number of Motifs</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE</td>
<td>11</td>
<td>1029</td>
</tr>
<tr>
<td>CW</td>
<td>18</td>
<td>737</td>
</tr>
<tr>
<td>ME</td>
<td>12</td>
<td>249</td>
</tr>
<tr>
<td>MW</td>
<td>2</td>
<td>94</td>
</tr>
<tr>
<td>RE</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>RW</td>
<td>5 (2 +3)^</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>2142*</td>
</tr>
</tbody>
</table>

*not including the motifs at the restricted sites

<table>
<thead>
<tr>
<th>Survey Section</th>
<th>Paintings</th>
<th>Drawings</th>
<th>Stencils</th>
<th>Engravings</th>
<th>Prints</th>
<th>Combination</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE</td>
<td>79</td>
<td>8</td>
<td>3</td>
<td>938</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>CW</td>
<td>198</td>
<td>25</td>
<td>101</td>
<td>407</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>ME</td>
<td>168</td>
<td>38</td>
<td>9</td>
<td>1</td>
<td>27</td>
<td>6</td>
</tr>
<tr>
<td>MW</td>
<td>4</td>
<td>5</td>
<td>32</td>
<td>49</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>RE</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RW</td>
<td>21</td>
<td>2</td>
<td>restricted</td>
<td>6</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Number of Motifs</td>
<td>474 (22.1%)</td>
<td>78 (3.6%)</td>
<td>145 (6.8%)</td>
<td>1401 (65.4%)</td>
<td>30 (1.4%)</td>
<td>14 (0.7%)</td>
</tr>
</tbody>
</table>

| Table 6.1 Total site and motif count for the Chillagoe assemblage ( ^ 2 reportable and 3 restricted sites) |

The assemblage comprises six different production types (see Table 6.2). The 1401 engravings predominate (although they do not occur in every part of the limestone belt)
representing over half of the motif catalogue (65.4%). The prevalence of these engraved motifs distinguish Chillagoe from the surrounding regions. A total of 474 painted motifs also occur (22.1%), and while stencils and prints are less frequent, they are sometimes found in specialised locations (see section 6.7). Drawings are present in small numbers in the majority of survey areas, while combination motifs are rare. The stylistic variations in the assemblage are examined in detail in Chapter 7.

6.3 The Wakaman Traditional Owner perspective: the cultural landscape of the Chillagoe-Mungana limestone belt

The rock art of the Chillagoe assemblage is embedded in a rich cultural landscape, and the Wakaman people’s observations are crucial to understanding the significance of the sites and the rock art motifs. Before examining the specifics of the rock art results, therefore, it is important to introduce the Wakaman traditional knowledge of how Aboriginal people, at least in the recent past, viewed the limestone belt and its place in the socio-cultural context of north Queensland. The Wakaman people’s traditional relationship to the landscape is the lens through which the patterns in the assemblage in this thesis are viewed. While due to issues of cultural sensitivity many aspects of the individual motifs cannot be examined, the Wakaman cultural insight, their on-going connection with the country and the rock art sites, imbues the archaeological findings with depth and nuance. The traditional knowledge presented here consists of what the Traditional Owners have allowed to be shared publically.

Unfortunately, very few Wakaman elders of the oldest generation are still alive, therefore, the senior Wakaman Traditional Owner, Mr Rodney Chong, has been designated by the community as having the greatest breadth of traditional knowledge relating to the rock art sites and ceremonial traditions. Mr Chong has generously provided the cultural context for this project. Mr. Rodney Chong, the senior male elder of the Wakaman people, holds a great concentration of traditional knowledge passed down through the patrilineal familial line, directly from his ancestor, Mick McTavish, who was one of the few members of the Wakaman people to survive an undocumented massacre which occurred in the late 1800s. The Chong family has maintained the continuity of their traditional knowledge of the district throughout successive generations. Mr. Rodney Chong himself was born in the Chillagoe hospital in the 1930s.
and lived with his family in the township of Mungana, being one of the last residents to leave when the township was dismantled and abandoned in the mid-20th century. Mr. Chong also spent the majority of his life working as a stockman on the pastoral stations located on the Wakaman traditional territory and the adjacent traditional estates in north Queensland. Mr Rodney Chong is the keeper of the Wakaman law and one of the last remaining Wakaman speakers (see Figure 6.1). The Wakaman people have remained on country, although they have not resided in the Chillagoe township. As stated in Chapter 3, this absence from town resulted in previous researchers having difficulty in identifying appropriate Wakaman consultants. The Wakaman traditional knowledge was not lost, however. It just has not been shared before. The following section is a summary of discussions with Mr. Rodney Chong and his daughter Ms. Carol Chong, Wakaman Cultural Liaison, held between 2013 and 2016.

Figure 6.1 Senior Wakaman Traditional Owner, Mr. Rodney Chong, on site in Chillagoe, Queensland
6.4 The Wakaman perspective: Wakaman country and the Chillagoe-Mungana ceremonial meeting ground

The approximate boundaries of the Wakaman Traditional estate are discussed in Chapter 2, and the Wakaman people occupied the territory adjacent to the limestone towers, stretching south and west approximately 150km towards Mt Surprise, one of the largest Aboriginal traditional territories in the north Queensland region. The Chillagoe-Mungana limestone belt represents the most north-eastern section of the Wakaman traditional estate (see Figures 6.2 and 2.3).

While the Wakaman people occupied the breadth of the estate prior to European contact, they generally focused the majority of their occupational activities around the Tate River, located 45 kilometres southwest of Chillagoe, in what Mr. Rodney Chong designates as “the heart” of Wakaman territory (Rodney Chong, pers. comm. 2013). Periodically, however, the Wakaman people would travel to the Chillagoe limestone belt for ceremonial and meeting reasons. When the Wakaman arrived in the area of the limestone belt, they would not occupy the limestone caves for extended intervals; the area was used instead for short-term habitation and ritual purposes. The limestone belt was primarily visited for culturally related activities, rather than providing a year-round shelter and habitation context (Rodney Chong pers. comm. 2013).

The Chillagoe karst holds a special significance for the Wakaman people as a sacred cultural landscape. The limestone towers are a focal point for lore, story and ceremony. The limestone belt was seen by the Wakaman people as being a meeting ground, a place for ritual, gathering, and exchange. The limestone belt formed the north-eastern boundary of Wakaman country, the changeover zone from Wakaman country to the neighbouring Kuku Djungan and Wakara territories (see Figure 6.2).

The limestone belt has significance not only for the Wakaman people but also for the surrounding groups of Aboriginal people as well, such as, in the recent past, the Kuku Djungan, the Wakara and the more distant Bar-Barrum people. The Chillagoe-Mungana limestone belt at the time of European contact, according to Rodney Chong (pers. comm. 2013), served as the shared boundary and ceremonial ground for the different groups in the region. The Aboriginal name for Chillagoe is “woorthanka,” a Wakaman or Kuku Djungan word for “meeting place.” Jessie Chong, a Wakaman woman and the
mother of Rodney Chong, told her descendants that Chillagoe served as a meeting area for the local Aboriginal groups who travelled there for ceremonies, dancing and trading before returning to their respective traditional estates (Carol Chong pers.comm. 2014).

The boundaries and buffer zones of these groups were well defined. The limestone towers formed a spine between the regions, a place that could be visited under mutually agreed conditions with formalised relations between groups governed by understood parameters. The boundaries and shared areas are universally recognised. There were consequences for straying into areas without express permission. When the Wakaman travelled to the area in the recent past, for example, they would stop and camp on the outskirts of the limestone belt, and certain landscape features would act as signposts designating the end of the sole occupation area and the beginning of the shared or boundary zone. When visiting the karst area, the Wakaman people would always remain on what they view as “their” side of the limestone belt – the western and southern side (Rodney Chong, pers. comm. 2013).

Geographical orientation and directional placement are key components of how the Wakaman people interact with the landscape. Not only would they use and occupy parts
of the limestone belt most closely associated with their traditional territory (e.g. sites on the western and southern side of the limestone belt which were seen as being nearer to the central section of Wakaman country, and, therefore, more suitable for ceremony and habitation), they also oriented their rock art so that “it points back to country” (Rodney Chong, pers. comm. 2013). The Wakaman people deliberately positioned rock art on surfaces in shelters, mindful of the directional orientation. The embedded nature of the cultural landscape within the wider region was thoroughly understood and of primary importance when selecting sites for different purposes. A key aspect of the Wakaman people’s relationship to country is the spatial awareness of where they and certain landscape features are located within the broader Wakaman estate. In terms of the limestone belt, this awareness is displayed in how they viewed the area surrounding the karst towers. The western and southern sides of the limestone belt are considered fully Wakaman, closely tied to the larger traditional territory. The north-eastern side of the towers, however, is nearer to the border of neighbouring groups’ territory. The Wakaman recognise the other groups’ shared connection to that north-eastern area, since that section of the limestone belt was utilised by those neighbouring groups when they would all gather for ceremonies.

While the land around the karst was a shared precinct among the various groups, divisions existed on who has the authority to ‘speak’ for certain sections of the limestone belt. These distinctions are still recognised today. An example of this mutually agreed partitioning of authority for particular areas became evident when damage to a rock art site in the southern part of the limestone belt was discovered during the course of the fieldwork for this project. A Wakaman Traditional Owner, Ms. Carol Chong, was on site when the damage was uncovered, so as a courtesy to the Kuku Djungan people, I informed them of the incident as well. While the Kuku Djungan representative was grateful for the information, I was directed back to the Wakaman people, since the damaged site was “on Wakaman country” and, therefore, under their decision making control. This sectioning of the limestone belt into areas more associated to particular groups is important when discussing the stylistic variations in the assemblage in the next chapter.
6.5 The Wakaman perspective: the rock art

Because the Wakaman people created and placed the rock art motifs on the walls of the caves and shelters of the Chillagoe district primarily for ceremonial purposes, much of the knowledge about the limestone rock art is restricted and cannot be shared publically.

As stated in Chapter 3, only minimal rock art and archaeological research has been undertaken on Wakaman sites away from the Chillagoe-Mungana limestone belt, so no published research on Wakaman rock art styles can be cited here, but rock art, according to the Wakaman Traditional Owners, does occur at various locations throughout the larger Wakaman traditional territory, with a number of stencil sites located in sandstone escarpments along the Tate River in the heart of Wakaman territory, for example. According to the Traditional Owners, stencils and engravings comprise the main core of the Wakaman artistic tradition. Stencils encode significant information about the social hierarchy of the group, and they are produced in conjunction with a range of ceremonies, not restricted solely to burial practices (unlike David’s (1992b) assertion, see Chapter 3.11) (Rodney Chong pers. comm. 2014). The rock art found in Wakaman territory (away from the Chillagoe-Mungana limestone belt) appears to share stylistic characteristics with the North Queensland Highlands rock art province (see Chapter 8), a stencil and engraved-based tradition which stretches hundreds of kilometres into the interior of Queensland. The same rock art types (stencils and engravings) are echoed in Ewamian country directly to the south of the Wakaman area, but rock art research there has been patchy as well, with no published rock art studies. What is evident, however, is that the Wakaman territory appears to comprise the most northern edge of the large semi-arid rock art province, which includes the North and Central Queensland Highlands (see Chapter 8). The Chillagoe limestone belt is the interaction crossover zone where groups who inhabit the more arid interior meet the resource rich populations in north-eastern Australia.

While the specifics of the rock art motifs, their meanings and their function in ceremonial practice cannot be related, the Wakaman Traditional Owners have supplied some general background detail about the rock art of the limestone belt. The rock art found at Chillagoe contains the stories and cultural knowledge of the Wakaman people. As Ms. Carol Chong (pers. comm. 2014) says,
Rock art is very important to the Wakaman because it tells the story of our people. Rock art marks our very sacred landscape, and the symbols contain our totems that connect us to our ancestors. Rock art is our record and our keeping place of our knowledge, lore and culture. Rock art is a powerful link between our country, our past and our people.

According to Mr. Rodney Chong, the colours chosen for rock art motifs are very sacred to the Wakaman. Red and white are especially important. Knowledge about the colours is men’s business and is therefore restricted, but it is important to realise that colour choice was a meaningful factor in rock art production.

Engravings also hold a special significance for the Wakaman. The abraded lines, for example, found in the shelters of the Chillagoe karst, according to the Wakaman Traditional Owners, are related to ceremonial practices and body scarification. They represent a direct connection to the sacred country, where the cutting of the flesh of the body reflects the incisions in the stone, a powerful bond between person and landscape. The engraved cupules too were produced by a particular Dreamtime Being who resides within the rock.

The traditional knowledge of the karst being a meeting place, a communal zone where different groups gathered to strengthen cultural ties through shared ceremonies and exchange can be seen in the rock art motifs and site types in the Chillagoe-Mungana area. The archaeological results which mirror this traditional knowledge are discussed in the following sections.

6.6 Nodes in the landscape

As stated in Chapter 5, in each of the six survey sections of the Chillagoe limestone belt, certain focal locations, activity nodes or site complexes, are scattered along the karst formation. These site complexes usually present as one central site with several adjacent satellite sites, generally within 500m. The main sites appear to be used more intensively and are characterised by multiple layers of rock art motifs and high motif counts. The satellite sites, however, have fewer motifs and little superimposition.

Seventeen of these focal site groupings are spread evenly throughout the limestone belt, approximately 2-6 kilometres apart (see Chapter 5). Several of these site complexes are also positioned at the geographic extremes of the limestone belt, at the most southern, eastern, western points.
The number of sites per kilometre diminishes the further north travelled in the limestone belt, with the southern survey sections containing a higher density of sites and motif counts per km$^2$ (see Chapter 5). It is unclear whether this site density is primarily influenced by geological features, since the karst towers thin out as the limestone belt approaches the Walsh River boundary in the north, or whether this concentration of sites in the southern end of the limestone belt is a result of cultural and social factors. Site selection does not appear to be solely determined by geology, however.

As stated in Chapter 2, there are over 560 known caves in the Chillagoe-Mungana formation, and an even greater number of rockshelters which have not been included in this cave count. Many hundreds of suitable surfaces for rock art production are available, often with multiple, seemingly similar cave and rock shelter types adjacent to each other in the same tower grouping, yet only some of the rock shelters and caves show evidence of visible rock art production or occupation. Out of the multitude of possibilities, only forty nine sites were chosen to house rock art motifs that we know of (but there may be a few more yet to be discovered).

The reason of why one cave or rock shelter was selected over another, however, appears not to be determined by specific geological features or proximity to resources. Birkett (1985: 137), when doing a site catchment analysis of the Walkunders complex, identified that there were adequate water sources located throughout the limestone belt, or within a two hour travel radius, so the positioning of these intensively used sites is not necessarily tied to the ready access of water. Food sources are also distributed equally throughout the belt, on both the plains and the towers themselves, so sites are not clustered in particular locations due to proximity to specific food assets. In terms of the geology and shape of the shelters and sites, there is no clear determining factor of why certain sites were chosen over other caves and shelters, often of similar size and floor type, which are located in nearby towers. Particular towers and shelters were favoured for occupation and rock art production, while other locations seemly equally suitable with similar dimensions and shelter potential, were not visibly utilised.

In addition, there appears to be little correlation between the sites and local lithic or other material resources, with no large scale quarrying of stone in the immediate area. Scarred trees are rarely found in the open eucalypt forest surrounding the towers, so
access to certain sections of the plains, for example for the exploitation of sugar bag or
trees for weapon manufacture, does not seem to be a deciding factor, although
woodworking activities occurred in the region, as evidenced by the number of
woodworking implements recovered from the Fern Cave excavation (see Chapter 3.6).
Other socially and culturally motivated factors, rather than access to resources, such as
site use and geographical location, appear to have influenced the selection of certain
areas for utilisation.

The archaeologically sterile gaps of several kilometres between the seventeen nodes of
activity may have been the result of low numbers of people, in small groups, visiting the
region at any one time, so only a limited number of rockshelters were needed, and
places in the landscape which had enduring cultural significance were revisited and re-
inhabited on multiple occasions.

Another alternative explanation is that the ‘empty’ areas between these seventeen
complexes may have been used for activities which did not leave a visible
archaeological trace.

A third possibility for this pattern of site distribution is suggested by traditional
knowledge of the Wakaman people. This sprinkling of sites may be a consequence of
the shared aspect of the territory, whereby groups travelling to the region would occupy
only designated areas of the limestone belt, maintaining buffer zones of up to six
kilometres between themselves. The dispersal of sites across the landscape may be a
result of the organised, formalised manner in which groups (at least in the recent past)
interacted within the landscape.

This deliberate positioning is supported by Rodney Chong (pers.comm. 2013) who
states that when the Wakaman people approached the limestone belt, they would first
stop and camp on the outskirts at Cod Springs, a now dry spring located to the
southwest of the limestone belt. This spring, he was told by his mother, was a kind of
geographic signpost signalling the edge of Wakaman territory, beyond which point was
a shared ceremonial meeting zone. When passing into this communal area, certain
conditions remained in place. Each individual Aboriginal group occupied their
designated ‘side’ of the karst in established, bounded spaces. These ascribed areas in the
towers were closely associated with particular groups depending on where they were
located. The seventeen site complexes, in this scenario, represent nodes of focus in the landscape, places of concentrated ritual activity which were perhaps deemed as suitable in this more socially and politically controlled environment, allowing groups to position themselves across the landscape with buffer zones in between.

In fact, all of these motivations may have played a role in the pattern of site distribution, but social, cultural and political factors, rather than subsistence ones, appear to be of primary significance.

6.7 Site types: exposed sites, elevated sites and deep caves

The demands of particular ceremonies, the numbers of people involved, the separation of space according to ritual or social factors may also account for the organisation of sites into complexes. All site types in the Chillagoe karst are not the same, and it is important to distinguish between the different site types and the stylistic features of their associated rock art.

Two features are key when describing the Chillagoe rock art sites: the site’s spatial positioning on the karst tower and the quality of the illumination it receives. In the Chillagoe formation, three kinds of sites contain rock art: exposed sites, elevated sites and deep caves. These three rock art site types are differentiated by their vertical position on the tower as well as by their exposure to light. These three site types occur in varying frequencies throughout the limestone belt, and they often encompass different rock art motifs which may indicate their possible use and function in the cultural landscape (see Table 6.3).

Exposed sites: large and small

Exposed sites are the most numerous site type in the Chillagoe-Mungana area. Out of the 46 non-restricted sites, 38 sites fall into this category (see Table 6.3 and Figure 6.3). Exposed sites are located at the base of the karst, either in rockshelters or spacious caves. Exposed sites often have large flat or gently sloping areas in front of the shelters, and they are generally accessed by walking in directly from the adjacent plains. These sites are usually fully bathed in sunlight, aligned either along the sheer walls of the limestone towers with little protection, or in open-mouthed caves, where the illumination reaches the rear walls and interior chambers. Artefact scatters and stone
<table>
<thead>
<tr>
<th>Site Type</th>
<th>Exposed</th>
<th>Elevated</th>
<th>Deep</th>
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</thead>
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<tr>
<td></td>
<td>Large (L)/Small(S)</td>
<td>Lookout (LO)/Panel(P)</td>
<td>Twilight (T)/Dark(D)</td>
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<tr>
<td>CE01</td>
<td>L</td>
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<td>CE02</td>
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<td>*LO</td>
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<tr>
<td>RE50</td>
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<td>LO</td>
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</tr>
<tr>
<td>RW46</td>
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<tr>
<td>RW47</td>
<td>S</td>
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<tr>
<td><strong>Total</strong></td>
<td>38</td>
<td>4 (+3 mixed)</td>
<td>4</td>
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</table>

Table 6.3 Site types in the Chillagoe assemblage. An * denotes sites that have secondary characteristics in more than one category.
arrangements are often associated with these sites in front of the shelters or in the cave entrances. The rock art is arranged on panels on the walls or ceilings of the shelters, in easily visible, prominent locations, either near the entrance, on the exposed ceiling, or in fully lit areas at the rear.

Two types of exposed sites exist in the Chillagoe karst, depending on the width of the site and the number of motifs present: large versus small. Large exposed sites are typified by a wide, open area in the shelter or cave between 10-20 metres across, which could encompass a sizeable group of people (e.g. site CE04 which is 20m in length, and CW20 which is 19.5m long). The large exposed sites are usually the main site in the various rock art site complexes with the greatest number of motifs. Eleven large exposed sites are dispersed throughout the limestone belt (see Figure 6.3).

Small exposed sites, on the other hand, are characterised by single rock art panels placed in shallow alcoves or on sheer surfaces with minimal shelter and space for gatherings (e.g. MW44 is 3.6m wide, and RW46 is a narrow crevice only 0.4m in width). These smaller motif sites primarily occur as the satellite sites in the various site complexes. Because multiple small exposed sites are clustered around a single larger one, these small exposed sites are the most numerous site type in the Chillagoe assemblage with 26 examples.

What is significant about these exposed sites, which is also corroborated by the traditional knowledge of the Wakaman elders, is that defensive positioning does not appear to be critical aspect of site selection. These exposed sites are all easily

![Figure 6.3 Examples of a large exposed site, ME42 (left), and a small exposed site, CE02 (right)](image-url)
accessible, not tucked away in the interior of the towers, not hidden from view and entered through a series of narrow passages. Rather, for the majority of rock art sites at Chillagoe, the preference is for open, exposed locations, often with flat areas for gatherings in front or within the shelters or the lighted caves themselves, with rock art on prominent surfaces. These exposed rock art sites and the large number of open artefact scatters, such as the 46 open sites recorded by David (1996a) along the banks of the Walsh River and the surrounding plains (see Chapter 3.3), show that the karst formation and the adjacent landscape could support a number of people congregating in the area. These gatherings do not appear to need protection from hostile groups or individuals. Even though the karst formation, at least in the recent past, formed the boundary between multiple Aboriginal groups, speaking different languages and with varying cultural traditions, these exposed sites reinforce the traditional knowledge of the karst being an area which promoted group bonding, with little conflict.

The large exposed sites may have been the focus for larger group gatherings or for activities and practices where more space was required. The smaller exposed sites probably fulfilled a number of functions, such as acting as territory markers or signposts, or as more intimate spaces which were conducive to smaller group activities (see Figure 6.3).

_Elevated sites and elevated panels_

The second site type in the Chillagoe karst is elevated sites. Similar to exposed sites, elevated sites are fully lit, but they differ in their spatial position on the karst towers. Elevated sites (as their name suggests) are located either high on the karst themselves or in rockshelters and caves at the tops of hills. Elevated sites are accessed either by scrambling up the limestone formation or by climbing up ridgelines. Two types of elevated sites exist in the region: ‘lookout’ points and elevated rock art panels. These two types of elevated sites probably served different functions for the local Aboriginal people, and they encompassed slightly different stylistic characteristics of rock art motifs. Elevated sites are fairly rare in the Chillagoe assemblage. There are four primary elevated sites (two of the lookout variety and two elevated panels). Three additional sites have secondary elevated characteristics, so they have also been included (see Table 6.3).
‘Lookout’ points

Only two true lookout points are found in the Chillagoe assemblage (RE50 and CE10). These two sites have limited space for sitting and uninterrupted views overlooking the surrounding plains, ideal vantage points. Two other sites, CE01 and MW45, are also elevated with views, but they also fall into other categories due to their size and or the quality of light.

![Figure 6.4 Elevated site CW10 as seen from ground (left) and view to the northeast from CW10 (right)](image)

The lookout sites are generally positioned at the geographic extremes of the limestone belt, e.g. CE01 is located at the south-eastern edge and RE50 is the most northerly site. While CW10 is located in the central part of the limestone belt, it has a 280° sweeping outlook (see Figure 6.4). Being an excellent viewing platform may not have been the sole determining factor in the site selection, however, especially in the case of CE01 and MW45, which are spacious caves excellent for habitation. CW10 and RE50, on the other hand, have rocky floors and only space for a small number of individuals. They are not conducive to long-term habitation. These sites may have aided in controlling access to the region.

_Elevated panels_

The other type of elevated site consists of individual panels placed high on the sheer walls of the karst, easily visible from the base of the towers. Only two sites consist of elevated panels, CE06 and CW22, as well as one additional site which has a single elevated motif, ME35. The rock art in the two main elevated panels, more than 10m above ground level, would have been produced by climbing the karst tower itself, possibly with the use of scaffolding. The elevated panels are differentiated from the lookout sites because the display of the motifs appears to be the focus rather than the
view from the site. With the elevated panels, there is no space for sitting and limited shelter (see Figure 6.5). The rock art motifs in these elevated panels are highly visible from below. This increased visibility is especially prominent at CW22, where the engravings are of a larger size than is typical elsewhere in the Chillagoe assemblage. These oversized motifs suggest that they were designed and positioned to be seen from a distance, perhaps as a method of signposting and territorial marking (see also section 6.9). The other elevated panel is composed of a horizontal line of nine highly patinated cupules, which are positioned in a shallow curved shelf at the rear of the site. Interestingly, both of the elevated panels are oriented almost due north (338° for CE06 and 26° for CW22). The third elevated motif is a single hand stencil at ME35. Intriguingly, all of these elevated panels are composed of either engravings, stencils or a mixture of both.

Figure 6.5 Elevated panels: CW22 (left) and CE06 (right) as seen from ground level

Deep caves: the twilight and dark zones

The third rock art site type in the Chillagoe area, however, differs significantly from the exposed and elevated sites in terms of the amount of light which filters through the site.
As in other archaeological regions where a mixture of caves and rock shelters are present, the quality of light is a critical distinguishing feature for site types in the karst. Three gradations of illumination are crucial when describing sites, depending on the amount of light and spaces within the cave that it reaches: the light, twilight and dark zones (see also Faulkner 1988; Moyes 2012; Taçon et al. 2012; Taçon 2014b). These three zones in the Chillagoe area have different associated rock art motifs, patterns of rock art placement, and associated cultural and social activities.

The Chillagoe karst is one of only a few areas in northern Australia where rock art situated in the depths of caves, in the twilight and dark zones. Five sites in the Chillagoe-Mungana limestone belt (CW16, CW17, MW45, ME39 and one restricted site) have rock art located in the twilight or dark zone. The use of the dark areas of caves for occupation and rock art production is relatively rare in Australia, especially in the northern part of the country. The dark and twilight zone positioning of rock art in Chillagoe, therefore, is a significant feature distinguishing the Chillagoe assemblage from many other rock art precincts.

Caves in the Chillagoe karst often have internal chambers accessed through a series of underground passages which have to be navigated in complete darkness – the dark zone. Other caves have rear spaces and chambers which are perpetually dimly lit, sometimes only at certain times of the day or year, depending on the cave’s depth and the positioning of the rock art panel in relation to the cave’s entrance – the twilight zone. The dark zones of caves never receive sunlight. The rock art in the twilight zone is difficult to see, requiring additional light sources both to create and record.

As stated earlier, while the majority of rock art found to date in the Chillagoe karst is positioned either near cave entrances, or on exposed rock shelters or open chambered day lit caves, there is a definite trend to exploit the deep interior of caves to place stencils and prints. These two types of rock art techniques were the only two found during this project located in the twilight (semi-dark) and fully dark zones.

This use of the twilight and dark areas at the rear of the caves is evident in several survey sections, particularly CW, MW, ME and RW. While the stencil site in RW cannot be discussed due to its cultural sensitivity, large concentrations of stencils (a total of 127) are spread across three additional sites (CW16, 17 and MW45). The
stencils at these three sites are at the rear of deep caves, in the murky twilight, with
difficult or hidden access points, with CW16 and CW17 being almost fully dark. The
two sites, CW16 and CW17, have a shared entrance, with access down a slope slightly
below ground level, through a low cave mouth that then separates into two large
adjacent chambers, with the entrance facing almost due west. Because of the angle of
the entrance, and the low overhanging roof (which then opens up into a high, vaulted
chamber) and the positioning of the stencils high on the phreatic pendants and the rear
wall of the cave, the motifs themselves remain in semidarkness throughout the day, and
for most hours, are in full dark (see Figure 6.6). MW45 is positioned up high on the
slope of a karst grouping, and the entrance to the cave is not easily visible from the
plains. An abundance of hand and arm stencils are arranged along the dimly lit phreatic
pendants at the rear of the front chamber.

Figure 6.6 Low entrance to CW16 and CW17. Interior chambers are almost fully dark.

The site ME39 is particularly significant because the twenty seven hand and finger
prints are situated in a fully dark interior chamber of a large karst, a site that is only
accessed through a network of dark tunnels, stretching 500 metres from one of two
access points on the exterior of the tower. To reach this site, a person has to wind their
way through a series of passages and interconnected chambers deep within the karst
tower in complete darkness. This fully dark rock art site is one of only a few of its type
in northern Australia. It was found during survey in 2013.
It has been proposed that Aboriginal people were reluctant to use the deep interiors of caves, but sites at Chillagoe demonstrate that Traditional Owners in this region did utilise the fully dark and twilight zones of the limestone towers for rock art production and associated ceremonies. According to the Wakaman Traditional Owners, this use of the darker sections of caves was linked with highly secret, restricted cultural and traditional ceremonies. The high concentration of stencils and prints were associated with different types of activities than those which occurred in the more exposed shelters on the exteriors of the karst towers or in caves that were fully lit by the sun. The darker places in caves were utilised to create a multitude of stencils and prints, likely in conjunction with gender-related ritual practice. According to the Wakaman Traditional Owners, the caves of the karst are particularly sacred, and the placement of these specific motifs, deep in the interior of the karst tower, had special ceremonial significance.

**Dark and twilight zone art in Australia**

In southern Australia, twilight and dark zone rock art is found in several locations, but it is uncommon and appears to be created primarily in the Pleistocene (Taçon et al. 2012; Bednarik 1990). In Tasmania, for example, as summarised by Taçon et al. (2012: 145), caves inhabited in the Pleistocene include “Warreen Cave (35,000-16,000 BP), Nunamira Cave (30,000 BP), Palewardia Walana Lanola (29,800 BP), Bone Cave (29,000 BP), Kutikina Cave (19,970-15,000 BP), Wargata Mina (with hand stencils well over 12,000 years of age), and Ballawine (with pigment art and a small occupation deposit at least 14,000 years old).” The two cave sites with rock art include hand stencils, two panels of which are in the fully dark zone, while another grouping of hand stencils is located at the “very limits of daylight penetration” (Bednarik 1990; Cosgrove and Jones 1989: 98; Taçon et al. 2012).

Five sites in southern mainland Australia have stencils in the entrance areas of limestone caves (Bednarik 1990; Lane and Richards; Morse 1984). Koonalda Cave in South Australia was one of the first sites discovered to have rock art positioned in the full dark zone, at least 300m from the cave’s entrance, accessed by a narrow tunnel. The Koonalda Cave rock art takes the form of finger flutings and incised lines and is presumed to be 20,000 years old (Bednarik 1990; Flood 1997; Gallus 1968; Taçon et al. 2012).
Bednarik (1990: 66) reports 33 additional cave petroglyph sites in southern Australia (29 sites near Mount Gambier, three near Perth and one site near Buchan). All of these sites are located in limestone caves, with the rock art positioned in the twilight and dark zone areas. In West Australia, in Orchestra Shell Cave engravings, presumed to have been produced in the Pleistocene, are located in dark narrow fissures in the limestone cave (Flood 1990; Taçon et al. 2012).

In northern Australia, however, rock art in deep caves is rare, and the five sites in Chillagoe represent the greatest concentration of sites found to date, although many of the internal chambers of the limestone karst in Queensland, for example, remain unsurveyed for rock art. Three small caves in the Wollemi region of New South Wales have rock art in caves which “do not receive direct sunlight” (Taçon et al. 2012: 140). Two of these caves have rock art motifs positioned in the twilight zone, while one cave is fully dark. Restricted sites with rock art placed in caves also occur in western Queensland in the Riversleigh limestone karst (Taçon et al. 2002).

Beside the sites reported in this thesis, one other newly discovered rock art site in the Wallace Creek karst, a northern outlier of the Mitchell-Palmer karst in Queensland, was recently documented in the twilight area of a cave (Winn and Buhrich 2014). During the survey, five previously unknown sites were recorded, all containing figurative and non-figurative style paintings, with one rock shelter also having highly patinated cupules (Gibson Cave). One of the sites, Balinga Cave, positioned at the base of a karst tower with a central chamber and several side passages, has forty-two monochromatic red motifs arranged on eight rock art panels throughout cave. Several of the panels are located in the semi-dark twilight zone either at the rear of the main cavern and or down the narrow passages which receive little direct light. (Winn and Buhrich 2014). Balinga cave also contains some highly culturally sensitive motifs identified by the Bulgun Warra Traditional Owners, suggesting that the cave was used for culturally-charged ceremonial activities.

The twilight and dark zone sites in Chillagoe are noteworthy not only because they are evidence of Traditional Owners using the dark places of the caves in ways not often seen in northern Australia but also because these sites reinforce the traditional
knowledge that the Chillagoe karst is a sacred landscape, a place for ceremonial gathering and ritual practice with enhanced spiritual significance.

6.8 Material culture stencils: evidence of long distance trade

Another aspect of the twilight zone sites in the Chillagoe region which illustrates that the area was used as a location that promoted group bonding and cohesion is the presence of material culture item stencils. These material culture item stencils, and the baler shell stencils in particular, demonstrate the links with larger socio-cultural network of north Queensland. They are evidence of long distance trade and the cultural exchanges which may have occurred in conjunction with the gatherings at Chillagoe.

Material culture stencils vary in the type of cultural item depicted across the limestone belt with only one material culture item (a boomerang) found in two survey sections (in CW and ME). A higher concentration of material culture stencils is present at the southwestern section of the limestone belt, with the greatest range of material culture items represented. Two sites in particular, the twilight zone sites of CW16 and CW17, contain the largest concentration of material culture stencils anywhere in the six survey sections, and the greatest number occur at CW17: 7 baler shell pendants and one club stencil. The baler shell pendant stencils are significant because they represent a trade item that would have been sourced outside of the Chillagoe-Mungana region and brought to the area, perhaps as part of a ceremonial exchange. The baler shell pendant stencils have been mentioned in previous studies (Watchman and Hatte 1996; Winn 2009), but their importance should be highlighted here because they represent concrete evidence of the Chillagoe-Mungana area being linked to the larger regional trade network, with material culture and trade items which have been sourced potentially hundreds of kilometres away being carried into rockshelters.

Baler shells (Melo diadema) were a significant trade item for Aboriginal groups across Australia from the late Pleistocene. Bowdler (1996: 41) cites evidence of the movement of baler shell inland over 100 km from the Kimberley coast, dating to c.30,000 BP. In Queensland, Roth (1901: 29) details the shell’s use as a water carrier near the east coast, then its subsequent trade “to considerable distances inland.” Mulvaney (1976) compiles a range of ethnographic sources to trace the origins and movement of baler shell objects through Queensland and further south. Mulvaney (1976: 82) identifies two possible
routes for the movement of the shells: one being sourced in the Gulf of Carpentaria and moving south through the Mt Isa-Boulia trade corridor; a second emanating on the eastern coast (as Roth described) but not straying far inland. What is significant about these ethnographically known routes is that the Chillagoe-Mungana area is not represented.

The stencils on the wall of CW17 demonstrate that baler shells were present in the Chillagoe district, and that the rock art producers deemed the items significant enough to be depicted. The existence of baler shells at Chillagoe suggests that the trade routes in Queensland may have stretched further inland than previously understood. The people of the Chillagoe district had contact, directly or indirectly, with groups further north, either on the east coast, sourcing material cultural items from the Princess Charlotte Bay area, or from the west, from the Gulf of Carpentaria. Perhaps the shells were exchanged as part of the ceremonial meeting between the groups surrounding the limestone belt. These baler shell pendants may have passed through Chillagoe as a trading node on their journey further south. In fact, the baler shell pendant stencils found in CW17 are very similar to a series of 23 baler shell stencils on the exposed wall of the sandstone escarpment at Cathedral Cave in Carnarvon Gorge in Central Queensland, a meeting and ceremonial area of the Bidjara and Karingal people, located 950 kilometres south of the Chillagoe area (see Figure 6.7).

As the Wakaman Traditional Owners have described, the gatherings at Chillagoe, a significant meeting place in northern Queensland, would have had associated cultural practices where the exchange of material goods served to cement the social and cultural connections between groups. The baler shell stencils on the dimly lit walls of CW17
demonstrate that trade items were brought into the district; they are the physical manifestations of this large scale exchange network. These motifs are further evidence of the limestone belt being a centre which promoted group unity through exchange.

6.9 Territory marking: signposting and totems

Another aspect of the Chillagoe rock art assemblage which points to the area being a meeting ground for local groups is that certain motifs appear to have functions of boundary marking and territorial signposting. As discussed in Chapter 4.2.7, the information exchange model predicts that individual motifs can sometimes function as signposts, marking territory and Dreaming tracks, the passage of Ancestral Beings through the physical landscape. Boundary areas and aggregation centres in Australia are sometimes marked in this manner as an aspect of border control, group cohesion and social signalling (see also Chapter 4.2.4).

While many of the motifs of the Chillagoe assemblage are distributed evenly throughout the limestone belt (for example, non-figurative designs are present in all six survey sections in the same relative frequency), several motif types appear only infrequently, in small numbers at a few sites or as single, isolated entities. Although, because of the small quantities, it is difficult to determine the significance of these motifs, several designs are found only at the geographic extremes of the limestone formation (at the most northern, southern and eastern points). Their geographic positioning suggests that these motifs, certain anthropomorphs, engraved body parts and track marks, may have had a boundary marking or sign posting function (in addition to other layers of meaning). The elevated panels presented in section 6.7 may also be associated with this signalling purpose.

Figurative motifs: anthropomorphs

Figurative designs are rare in the Chillagoe assemblage, with the majority of the survey sections having ≤ 4% of the Determinate motifs being figurative. There are only 26 figurative motifs found across the six survey sections, an extremely infrequent occurrence in an assemblage that has over 2100 motifs. Because the numbers are so small, the results should be viewed with caution, but some interesting patterns may illuminate the function of figurative designs in the assemblage.
Each survey section has approximately the same number of figurative designs (4 in CE; 7 in CW; 9 in ME; 4 in RE; and 2 in RW), though the Level Three and Four subtypes vary. The only notable exception is MW, which does not have any figurative designs at all. It terms of overall motif percentages, it should be noted, that figuratives occur slightly more frequently on the northern and eastern side of the limestone belt, with ME having the highest overall percentage 4%, as well as the highest figurative count (n=9), although this increased frequency is very small.

Of the three types of Level Three Figurative designs (anthropomorphs, zoomorphs and material culture items), anthropomorphs predominate representing 69.2% (18 motifs) of all figurative designs. Anthropomorphic designs appear to be located primarily at the geographic extremes of the limestone belt, with most examples either at the most eastern, southern or northern end of the limestone belt. The western side is less well represented, with only two examples found.

‘Simple’ anthropomorphs are the most common type in the Chillagoe assemblage, with 11 examples, all positioned on the eastern extremes of the limestone belt, except for one example located in the far south of CW. Several of these ‘simple’ types, located in different survey areas, are stylistically similar, yet only two of the anthropomorphic motifs appear almost identical in shape and colour: the ‘simple’ anthropomorphs found at the northern and southern extremes of the limestone belt. These motifs share a similar, elongated body shape, with no fingers or toes, and solid monochromatic red infill. Four examples are found at the most northern site, RE50, and a single example at the most southern site, CW11 (see Figure 6.8).

Also stylistically similar are groupings of three anthropomorphic figures, with one larger central figure with two smaller figures, seemingly attached. Only two examples of these groupings are present in the Chillagoe assemblage, both in the most eastern sites (one at ME38 and the other at CE02) (see Figure 6.9).
‘Complex’ anthropomorphs are less frequent, with only 5 examples found in three areas of the limestone belt: 1 at RW; 2 at ME and 2 at CW. Though the numbers are few, it is interesting that ‘complex’ representations occur slightly more frequently in the west, while the ‘simple’ forms are found more often in the east. None of the ‘complex’ forms are identical, each has individual characteristics and colour palette.
Body parts

The only two ‘body part’ anthropomorphic motifs, both engraved human hands, are also positioned at the extremes of the limestone belt, in the north and south, at RW47 and CW13 (see Figure 6.10).

Figurative motifs in the Chillagoe assemblage, though infrequent, potentially serve multiple functions and have many layers of meaning. The geographic positioning of the ‘simple’ anthropomorphs and the engraved hands at the northern, eastern and southern boundaries, however, suggest that these motifs may have had a sign posting function, a method of designating access, control or identification of certain spaces, visible when the limestone belt is approached from several directions.

The anthropomorphs may also be embodiments of a particular Creation Being, sacred to the Wakaman, about whom details cannot be given because of their culturally sensitive nature. Ancestral Beings inhabit the limestone towers, present both within the stone and on its surface, guarding the karst and the surrounding plains.

![Figure 6.10 Engraved human hand at CW13](image)

This particular entity dwells in the limestone towers, and these figurative representations may signify points of access as the Creation Being travels along a designated Dreaming Track through the limestone belt. These designs mark particular areas with enhanced significance and association, and they signify the boundary areas of
the karst, demarcating the edges of the sacred landscape (Carol Chong pers. comm. 2014).

*Tracks*

Track representations occur in the majority of survey areas, and they are created in painted, deep engraving and abraded forms. Track motifs either appear singly or in small groups, usually less than four on any one panel, and they are sprinkled evenly throughout the limestone belt in all survey sections except for RE. Only a single trail of tracks is on the ceiling of CW10, consisting of a different type of track than is found elsewhere.

Similar track designs were produced in the Chillagoe karst over hundreds, if not thousands, of years. For example, in the MW survey section, the same track type occurs at both sites, although at MW45, the track motif is deeply engraved and highly patinated, while at MW44, the track is produced in red pigment. If the highly patinated, engraved track motif is understood to be older (see section 3.17 for a discussion of age differentials of deep engravings), it demonstrates that there was a continuity of track design over a potentially long interval of time.

The Wakaman Traditional Owners have identified these track motifs as being totemic representations. The totemic animals, powerful spirit beings of the Wakaman people, dwell in the rocks and occasionally climb out and leave their tracks behind to mark their passage (Rodney Chong pers. comm. 2013). The tracks are representations of the Wakaman people and their enduring connection to the Ancestral Beings who formed and still inhabit the limestone. The track motifs tie the Wakaman people to the physical landscape. They are immovable, visible manifestations of the connection between the people and the place. The placement of tracks in small numbers at sites serves to highlight the association and identification of the groups in the area. While the tracks encode multiple meanings and functions for the Traditional Owners, the tracks strengthen the connection to place and signifying ownership of particular clan groups who used the area.

In CE, for example, there is only one track motif in the entire survey section. This track is placed prominently on the main rock art panel of the central site at the south-eastern edge of the limestone belt, one of the first sites that would be reached when travelling
from the east or south. In ME as well, tracks may signify border control and ownership. Two track motifs are found at two of the major sites in the survey section. Because these sites are located on the eastern edge of the survey section, in conspicuous locations on limestone towers which would be encountered first when coming from the north and east, these single track representations may have a boundary marking function.

The single track motifs (the type found most in Chillagoe) serve to mark the rocks with the totems of the groups who used the area, signifying their connection to the landscape, a clear signposting of possession.

6.10 Conclusion

This chapter concentrates on the features of the rock art assemblage which indicate the Chillagoe karst was a sacred, ceremonial meeting place in north Queensland, a cultural landscape where social, political and spiritual factors appear to influence site distribution, site types and the function of particular motifs. This archaeological evidence is corroborated by Wakaman traditional knowledge.

Using the tenets of the information exchange model, the stylistic characteristics of the rock art suggest that the Chillagoe-Mungana limestone belt served as an area which reinforced group identity for the combined population in the region. The belt, although it lay on the border of differing populations, appears to be a shared area, a precinct that displays commonality, rather than difference, that promotes inclusion on the local level, rather than division and friction. It was a shared interaction sphere which promoted ties and connections between the various groups, which reinforced the local collective identity of the people of the region through shared local messaging under mutually agreed conditions. The landscape was marked with totemic symbols and Ancestral Beings as a signal of ownership, Dreaming tracks and border control. The limestone belt may have functioned as a ritual base or centre, either with equal access for the surrounding groups, or a place on the border area where they could gather together for the purposes of ceremony and the strengthening of local ties, affiliations and marriage exchanges, with the typical accompaniment of trade and exchange practices. The rock art assemblage encodes messages of cooperation, rather than competition. It
communicates the strength of the local network, of affiliated local groups using a shared, sacred space.

The individual identities of the local groups are also present in the rock art, however. These stylistic variations, and how they reflect the wider regional influences, are examined in the next chapter.
Chapter 7 The Rock Art Assemblage: Boundaries and Individual Identity

While the previous chapter focused on the rock art and site characteristics which showed that the limestone belt was a shared ceremonial landscape that promoted group unity and cohesion, this chapter explores the features of the Chillagoe assemblage which reflect the diversity and individual identities of the local groups who gathered at the karst meeting grounds. The Chillagoe assemblage is not homogeneous. Variations in the presence and absence of certain motif production types and motif forms occur throughout the limestone belt. Information exchange theory predicts that in locales where a number of different (and sometimes competing) groups or individuals interact in the same geographic location, a more stylistically diverse rock art motif assemblage often results as the various parties seek to emphasise their differing social identities (see Chapter 4.2.5). Using the information exchange model, the geographic distribution of these stylistic patterns may indicate the differing social identities of the groups who interacted in the landscape and who put their individual stamp on the rock art assemblage. This chapter analyses the variation in production techniques, motif forms and colour choice to see whether it correlates with the local Aboriginal groups (the Wakara, the Wakaman and the Kuku Djungan people) who surrounded the limestone belt prior to European contact (see also section 8.3). The various cultural identities encoded in the rock art motifs are probed in order to map out the spheres of influence of the local groups on the assemblage and to examine the rock art motifs’ messaging of diversity and difference.

7.1 The local Aboriginal groups: the Wakara and the Kuku Djungan

Before investigating the variances in the Chillagoe assemblage, it is important to introduce the artistic traditions of the three groups whose traditional territories abutted the limestone formation: the Wakaman, the Wakara and the Kuku Djungan. The Wakaman rock art tradition (on sites away from the limestone belt) was presented in Chapter 6.5, and it is primarily a stencil and non-figurative engraving based tradition. However, the two other local groups who may have overlapped in the Chillagoe-
Mungana area, the Wakara and the Kuku Djungan, have stylistically different rock art assemblages.

The Wakara

The Wakara people at the time of European contact occupied the area directly north of the Walsh River. Unfortunately, little is known of their cultural traditions and no surviving members of the Wakara group could be identified for this project (see Figure 7.1).

To date, directly north of the Chillagoe-Mungana limestone belt, in Wakara country, a few rock art sites have been located in the area between the Walsh and the Mitchell Rivers. Two sites were reported in Cole and David (1992) as having a single non-figurative, monochromatic red motif in each. These two sites are the only information currently available on the rock art of the Wakara people, and it appears that the creation of rock art was possibly not an emphasised cultural activity.

Further north of the Wakara traditional territory, across the Mitchell River, 60kms north of the Walsh River and the Chillagoe-Mungana limestone belt, multiple sites have been recorded in the Mitchell-Palmer karst. The rock art there is primarily figurative in style. (The sites in the Mitchell-Palmer karst are examined in more detail in Chapter 8).
The Kuku Djungan

To the north-east of the Chillagoe limestone belt lies the traditional territory of the Kuku Djungan people, with Ngarrabullgan (Mount Mulligan), an impressive steep-sided mountain, positioned at the heart of the Kuku Djungan territory. The Kuku Djungan people hold Native Title over the mountain, but their traditional estate extends all the way to the Walsh River and the north-eastern section of the Chillagoe-Mungana limestone belt, a distance of about 55kms (see Figure 7.1).

According to the Wakaman Traditional Owners, in the recent past, the Kuku Djungan were the primary group who travelled to the Chillagoe-Mungana limestone belt area to gather for shared ceremonies (Rodney Chong pers.comm. 2013). Even though there is a close cultural connection between the two groups, the Kuku Djungan speak a dialect of the Kuku Yalanji language family, different to the Wakaman (Agwamin language family) speakers (see Chapter 2).

Ngarrabullgan, like the Chillagoe-Mungana limestone belt, has been used since the Pleistocene. Ngarrabullgan has one of the earliest occupation dates for Queensland, with the Ngarrabullgan Cave site being inhabited since 37,170 BP, although this initial phase of occupation was only “sparse” (David 1998a; David et al. 1998: 175; David and Chant 1995). David (2002: 153) later revised this occupation date to 35,460 +750/-690 BP since the initial results were never replicated. David et al. (2007) also reported a similar initial occupation date garnered from excavations at Nonda Rock, another Ngarrabullgan site (David et al. 2007; David 2002). Sporadic occupation and use of the mountain continued until 5400 BP, after which time the area was likely visited more frequently and the sites were used more intensively (David 1998a: 175). Occupation and use appeared to peak in the late Holocene, with the period between 3000 and 1000 BP seeing the most intensive activity at the sites (David et al. 1998). After 900 BP, however, this trend appears to reverse, with site use decreasing and the area possibly being abandoned (see David et al. 1998; David 2000; David et al. 2007).

The painted rock art of Kuku Djungan country is stylistically similar to the Chillagoe area, particularly in the predominance of non-figurative designs, but other components of the Kuku Djungan tradition, such as engravings, the frequency of stencils, and the types of drawings are dissimilar. For instance, no engravings or combination motifs are
present in the Kuku Djungan rock art assemblage, a clear and significant difference with Chillagoe (David 2002). What is intriguing about the Ngarrabullgan assemblage is that although it has similar Pleistocene occupations dates to Chillagoe, Ngarrabullgan was not part of the highly patinated engraved rock art tradition that extended through the interior of Queensland, north to the Mitchell-Palmer limestone belt in and into Cape York Peninsula. Stencils, prints and drawings, however, are found at Ngarrabullgan (see 7.3), and the connections with the Chillagoe assemblage are explored in this chapter.

7.2 The survey sections and their proximity to ethnographically known traditional territories (at the time of European contact)

Prior to discussing the stylistic variations of the Chillagoe rock art, the association between the six survey areas and the adjacent traditional territories of the local Aboriginal groups should be emphasised as their collocation provides the socio-cultural context for the archaeological results. Also, as presented in Chapter 6, the Traditional Owner understanding of the geographic divisions of the karst in terms of which groups have authority for individual pieces of country, which sections of landscape are more closely connected with particular groups, is essential for interpreting the findings. While it may be unclear how groups interacted in the region in the more distant past, the
ethnographically known territories of the Wakara, Kuku Djungan and Wakaman people were in place in the late Holocene at the time of European contact. It is also important, however, to remember that the limestone karst acted as a shared zone and the boundaries between groups were likely fluid and may be better thought of as spheres of interaction rather than strict, fixed lines (see Figure 7.2).

*The southern limestone belt*

The two southern survey sections (CE and CW) lie within the Wakaman traditional estate. The south-western side of the limestone belt, CW especially, is completely embedded in Wakaman territory. Travelling south and west from the CW survey section leads into the heart of Wakaman country. The south-eastern side, CE, while still considered part of Wakaman territory, represents the land approaching the eastern boundary of the larger Wakaman estate and the buffer zone between Wakaman country and the linguistically dissimilar Kuku Djungan people to the north-east (see also Chapter 2.4.1 and 2.4.2).

*The central limestone belt*

In the central limestone belt, the Wakaman influence remains strong in the west. The MW survey section is fully entrenched in the Wakaman traditional territory (see figure 7.2).

The central eastern side, the ME survey section, however, is different. ME incorporates the land approaching the Walsh River which forms the geographic boundary between the Wakaman and Kuku Djungan people, as well as being the linguistic boundary between the Agwamin language family speakers (such as the Wakaman people) and the speakers of the Kuku Yalanji dialects (such as the Kuku Djungan). The ME survey section represents the crossover zone between the Wakaman people and the Kuku Djungan group whose territory lies to the northeast. ME (and RE) are positioned in closest proximity to the Kuku Djungan estate, and they would be the first survey sections reached when the Kuku Djungan people travelled for gatherings at the limestone formation. The north-eastern side of the Chillagoe limestone belt, in particular, is seen as closely associated with the Kuku Djungan people (Rodney Chong pers.comm. 2013).
The northern limestone belt

The Walsh River forms the northern boundary of both the RW and RE sections, and it is the territorial boundary and dividing line between the Wakaman people and the Wakara group whose country was situated north of the Walsh in pre-contact times (see Figure 7.2). Today, the Wakara people are no longer present on their traditional estate, due to the arrival of European settlers (see Chapter 2.4.2).

Similar to the other survey sections discussed above, RW is primarily in Wakaman country, only bordered on the north by the Wakara people. The RE section, containing the least amount of limestone towers of any of the six survey sections, is bordered, however, by the Wakara to the north and by the boundary zone with the Kuku Djungan people to the east.

7.3 Variations across the limestone belt: production techniques and their geographic distribution

Previous studies have treated the Chillagoe rock art as one homogeneous assemblage with little or no stylistic variation across the limestone belt (see Chapter 3.11). This seeming lack of stylistic changes, however, may have been due to the manner in which the karst was subdivided for rock art survey, into only three sections, whereby only north to south divisions existed. However, when eastern and western partitioning in a six section system are taken into account, some patterns of distribution in the Chillagoe assemblage emerge.

Several of the motif production types, engraving, stencils and prints in particular, show variety in their frequency and geographic positioning (see Figure 7.3). When compared to the stylistic attributes of the local communities, these differences may illuminate which groups utilised certain sections of the karst more intensely, placing their individual signatures on the rock art.
Paintings

Paintings are the only production technique which occurs in all six sections of the limestone belt, having the widest geographic distribution. Painted motifs were produced in higher percentages in the two northern survey sections (RE and RW), though the numbers in those two sections should be viewed with caution, and the central eastern section of ME. In each of those sections, paintings account for more than two-thirds of the motifs produced: 67.5% in ME, 74.2% in RW, and 100% in RE (see Figure 7.3). The southern and western sections of the karst, CE, CW and MW, also have paintings, but the painted motifs comprise a smaller percentage, less than 30% in any survey section. MW contains the lowest percentage at 4.3%.

Painting appears to be the production type of choice in the north-east, in the region of the limestone belt closest to Wakara and Kuku Djungan territory. This stylistic choice appears to echo the painted traditions of the northern groups. Only paintings occur in Wakara country, and in the Kuku Djungan artistic tradition, painting also predominates. Paintings, in a stylistically similar non-figurative style, comprise the majority of the Ngarrabullgan rock art assemblage, accounting for over 80% of the pictures recorded. This figure also includes drawings, however, as David combines the two techniques into the ‘painting’ category (David and Chant 1995: 473; David 1998a).
The preference for painting in the northern karst region may be related to the geographic proximity to the Kuku Djungan and Wakara estates, but the high frequency of paintings may also be a function of the absence of other production techniques (e.g. engravings as discussed below) in that area.

In the southern and western parts of the karst, in Wakaman country, paintings are also found, but less frequently compared to other production techniques. The wide dispersal of painted motifs makes any particular patterns unclear, though the north-eastern section does appear more closely affiliated stylistically to the adjacent traditional territories.

**Drawings**

Drawings were produced in the majority of the six survey sections (except in RE where only paintings are present), although drawings only occur in low percentages, with most sections containing less than 10% (see Figure 7.3).

The north-eastern section of ME is slightly different, with the greatest concentration of drawing at 15.3%. When compared with the Kuku Djungan assemblage, however, the stylistic links are weak because of the lack of similar black charcoal drawings found at Ngarrabullgan.

Drawing appears to have occurred in Ngarrabullgan Cave in Kuku Djungan territory during the mid to late Holocene, likely between 5400 and 900 years BP (David 1998a: 165), but the extent of drawn motifs in the Ngarrabullgan assemblage is unclear since David (1988a) does not distinguish between the two rock art production techniques. David (1998a: 165) states that the Aboriginal occupants of Ngarrabullgan Cave “painted and drew abstract, linear designs,” and he mentions the presence of ochre crayons in the shelter, so it appears that drawing with red ochre pieces may have occurred. In the breakdown of colours used in the paintings at Ngarrabullgan, however, there were no black motifs (0%), suggesting that drawing with charcoal crayons, which was ubiquitous in the Chillagoe assemblage, did not feature in Kuku Djungan territory (David 1998a: 147).

The drawings at Chillagoe, while not abundant, may be a localised phenomenon, since no clear cultural connections are discernible. Because drawing was fairly uniform throughout the Chillagoe assemblage with little geographic variation, this production
technique may have suited the messaging purposes of individual artists or specific motifs, a production technique which was used more frequently in the karst landscape than in surrounding areas.

**Stencils**

Stencils appear in five survey sections, the three western sections of CW, MW and RW and the two eastern sections CE and ME. Although stencils were geographically widespread, their distribution was uneven depending on their association with particular site types. Stencils are primarily linked to two of Chillagoe’s site types (as detailed in Chapter 6.7): exposed sites and deep caves. Stencils are grouped either in low concentrations (≤ 5 examples per site) on exterior exposed panels or in high concentrations (≥ 32 motifs per site) in the twilight zone of deeper caves. The high density twilight zone stencil sites were discussed in Chapter 6.7.

The geographic distribution of the two types of stencil sites differs. In the west, both low and high concentration stencil sites are found. The western sections of CW and MW contain the greatest percentage of stencils (13.7% and 34% respectively) as well the highest individual motif count, with 133 stencils at three sites (and one restricted site in RW). CW houses several low density, exposed sites as well: CW18 (2 stencils) and CW22 (4 stencils) (see Figure 7.3).

While stencils are present in the eastern sections, they occur at much lower frequencies and concentrations, and there are no high density sites in deep caves. Five sites are scattered across the CE and ME survey sections: ME31 (5 stencils), ME34 (2 stencils), ME35 (1 stencil), ME43 (1 stencil), and CE07 (3 stencils). All of these low density stencils are located on external tower surfaces, and all of the exposed stencils are of hands (some being child’s hands) except for one example of a material culture stencil, an infilled boomerang stencil, adjacent to a hand stencil at site ME34. Some of the exposed stencils may be used in social signalling and territorial marking (see Chapter 6.9). The small numbers account for the low overall percentages in the eastern part of the limestone belt, CE having 0.3% stencil production and ME, 3.6%.

The high density stencil sites in twilight zones of caves only occur in the west, closest to Wakaman territory. The panels with numerous stencils appear to be closely associated with the Wakaman people and their stencil based artistic tradition. The stencils were
likely produced in conjunction with particular Wakaman ceremonial practices at least in the recent past (see Chapter 6.7).

The smaller, exposed stencil sites, however, are more uniform in their distribution, and they may have links with the Kuku Djungan rock art assemblage. At Ngarrabullgan, stencils are present, but hand stencils primarily occur in low frequencies per panel. Few material culture items were stencilled, with only two red “asymmetric” boomerang stencils (David and Chant 1995: 473). The total number of stencils in Kuku Djungan country is 73, significantly less than in the Chillagoe assemblage, even though Ngarrabullgan has a similar number of sites recorded (42 sites) (David 1998: 155). While the concentration of stencils per site is not given for Ngarrabullgan, it would appear that the overall density per site must be low, since 73 stencils are spread across 21 sites (David 1988a).

The lack of high density sites in the north-eastern area of the Chillagoe limestone belt, which mirrors the stencil production in the larger Kuku Djungan territory, illustrates there are distinct stylistic discrepancies between the north-eastern and the western sides of the karst. This divergence mirrors the cultural attributes of the two groups who gathered in the region (see Figure 7.4).
**Engravings**

Engravings display the greatest variation of any of the production techniques, and they are not found in the majority of the survey sections (see Figure 7.3). Engravings are concentrated in the western and southern sections of the limestone belt, in large numbers in the three western sections, CW, MW, RW and the south-eastern section of CE. Engravings dominate the two southern sections in particular, accounting for 91.1% of motifs produced in CE, the majority of which are deeply engraved cupules, and 55.1% of motifs in CW, again primarily cupules and abraded lines. In MW, a high percentage of deep engravings are also present, accounting for 52.1% of motifs produced. In RW, a smaller percentage of engravings are present, but they still are significant at 20.7%.

![Figure 7.5 Approximate areas of deep engravings](image)

In the two north-eastern survey sections, RE and ME, which lie closest to the Kuku Djungan boundary, engravings are exceedingly rare. No engravings are present in RE, and, more significantly, ME, which encompasses 12 sites and 249 motifs, has no deeply engraved motifs and only one shallow and one combination engraving. Engraving accounts for 0.4% of the motif count in this area, a clear difference to the western and southern sections of the limestone belt.
The concentrated distribution of engravings on the western and southern sides of the limestone belt correlates closely to Wakaman traditional territory. Engraving is a significant component of the Wakaman artistic tradition. The absence of engravings in the north-east, however, indicates either that different cultural activities took place in this region, or that a group with different cultural traits produced the motifs. No engravings have been recorded in the larger Kuku Djungan territory, suggesting that the lack of engravings in the north-eastern karst region is an aspect of the Kuku Djungan influence, since engravings were not a cultural component of the Kuku Djungan people (see Figure 7.5).

**Prints**

Prints are rare in the Chillagoe assemblage, only occurring at three sites in two of the survey sections, CW and ME. In CW, the prints are in very small numbers, with only 3 prints in the entire survey section (2 palm prints and a single fingertip print) or 0.4% of the total motifs. The prints in the south-west are positioned on exposed panels in open shelters.

As discussed in Chapter 6.7, however, the single site of ME39 is the exception to this pattern, where 27 prints are situated in a fully dark interior chamber of the karst tower. These 27 prints comprise 10.8% of the motifs produced in the ME survey section, a much higher frequency than elsewhere in the limestone belt.

In the Kuku Djungan region at Ngarrabullgan, David (1998a: 154) reports “hand stencils or prints” are found at 21 sites, although he does not differentiate between the two techniques, so it is unclear how many individual prints are present. David and Chant (1995: 473) (which was published prior to the completion of the rock art survey) reported 11 prints occurring in the Ngarrabullgan assemblage, ten of which were finger markings, including four elongated pigment marks produced by dragging the fingers across the rock surface. These extended finger smears appear similar to two motifs in ME39 group of prints, where the finger tips were trailed across the cave surface in extended streaks.

It is interesting that the single site with the most prints (ME39) in the Chillagoe assemblage lies in the ME survey section, close to the Kuku Djungan territory. The fact that prints are also present in the Kuku Djungan assemblage at Ngarrabullgan shows
that the prints in the north-east karst may be a manifestation of the Kuku Djungan stylistic influence on that area.

**Combination**

Motifs which combine two or more production techniques are the rarest production technique in the Chillagoe assemblage, and their distribution is fairly uniform across the karst, but in very small numbers and frequencies (see Figure 7.3). No combination motifs are documented in the two northern sections, RE and RW, and very few examples are located elsewhere. The central sections of the limestone belt exhibit the most combination motifs, but the number is very small. MW, encompasses the highest percentage of combination motifs found anywhere in the Chillagoe assemblage, consisting of 4.3% of motifs, all of which combine painting and drawing. ME as well has several combination motifs, either combining painting and drawing or a single painting and shallow engraving, but again, they are very infrequent at 2.4%. In the southern section of the limestone belt, combination motifs are almost non-existent, with CW and CE each having less than 0.5% of the motifs of the combination variety.

Combination motifs do not appear to have a consistent pattern of geographic distribution, perhaps because this technique was not employed with any great regularity. No combination motifs are reported from Ngarrabullgan (David 1998a; David and Chant 1995), so this production type is not shared with the Kuku Djungan people. Combination motifs, similar to drawings, may be a localised variant of the Chillagoe assemblage.

**7.4 Production technique summary**

There are distinct differences in the dispersal of the various production techniques with the north-eastern section of the limestone belt, the ME and RE survey sections, exhibiting the most variation in the presence or absence of certain production types. The lack of engravings, the higher concentrations of prints, the low numbers of stencils, and the slightly higher frequency of drawings distinguish the north-eastern area. The other parts of the limestone belt, however, appear to be more uniform, with greater numbers of stencils and engravings especially in the south and west.
These variations in the assemblage appear to coincide with the known territorial boundaries in the late Holocene and possibly result from the differing group identities of people who used the karst zone. This stylistic diversity in the north-east may correlate with that section of the limestone belt being most closely associated with the Kuku Djungan people, while the remaining sections of the limestone belt are more Wakaman in stylistic flavour with the emphasis on stencil and engraving production techniques. This pattern of geographic distribution of stencils, engravings and prints closely follows the borders and boundaries of the individual groups, a manifestation of their specific cultural identities.

Certain production types, namely drawing and combination motifs, however, appear distinctive to the Chillagoe assemblage, not clearly aligned with a particular group, but rather elements of local artistic tradition specific to the karst. Drawings and combination motifs suggest that aspects of the Chillagoe assemblage were not merely a product of local groups, but that the interaction of the various artistic traditions across the limestone belt sometimes resulted in the blending of the diverse influences into a localised, unique style.

7.5 Variations across the landscape: the geographic distribution of Level Two, Three and Four motif categories
Variations in geographic distribution also arise in the specific motif forms (e.g. Level Two: figurative, non-figurative, tracks, stencils and prints) and their sub-categories (Levels Three and Four), but the patterns are not clear, with individual survey sections often displaying a varying range of motifs (see Figure 7.6). The Level Two forms of stencils, prints and tracks have been discussed in previous sections (see Chapter 6.9 and sections 7.2). The dispersal of certain figurative and non-figurative designs, however, suggests that some forms may have been tied to specific sites or sections of the limestone belt rather than having correlations to particular groups.

Non-figurative designs

Non-figurative motifs predominate in the Chillagoe assemblage and their pervasiveness is a defining characteristic of Chillagoe rock art, distinguishing the region from the surrounding regional rock art provinces (see Chapter 8). On closer examination though, especially when looking at the Level Three and Four non-figurative forms, differences are discernible across the six survey sections (see Appendix 1.2 – 1.7).

The relative frequency of non-figurative designs decreases the further north travelled in the limestone belt. In the two southern survey areas, CW and CE, non-figurative designs account for the largest majority of motif types, with 99.2% in CE and 80.6% in CW.

This percentage declines slightly in the central two survey sections, with 78.6% of motifs being non-figurative in ME and 63.4% in MW. ME shows the greatest spread of non-figurative forms, with no individual Level Three category comprising more than 29.5% of the motifs found there (and no ‘dot and dot variations’). In the two most northern sections, RE and RW, whose results should be viewed with caution, RW has non-figurative designs in the 62.1% range, while RE has no non-figurative motifs.

The subtypes of non-figuratives also vary, with very few of the survey sections displaying a preference for the same type of Level Three non-figurative forms (see also Appendix 1.2 – 1.7).

Level Three: dot and dot variations

Similarities in the Level Three forms arise in CE and MW, with both having the greatest frequency of ‘dot and dot variations,’ primarily represented by cupules which comprise 61.7% of the non-figurative motifs in CE and 72.9% in MW. ‘Dot and dot variations’
are considerably less frequent elsewhere in the limestone belt with 16.7% in RW, 7% in CW and none in ME (see Figure 7.7).

**Level Three: open geometrics**

Open geometrics are most common in the western survey sections of RW (38.8%) and CW (69%), primarily ‘straight line’ variants, again, mainly in abraded form. They do occur elsewhere in the east in relatively large percentages (20.8% in ME and 32.6% in CE) as well. The only exception is at MW where they are very infrequent at only 5% (see Figure 7.8).

**Level Three: enclosed geometrics**

Enclosed geometrics do not occur consistently across the limestone belt, and they usually occur in small relative frequencies. Enclosed geometrics have not been detected in north-western section of the limestone belt, with none occurring in RW and MW. They are uncommon in the south, less than 10% of the non-figurative motifs there. Only in ME do they appear locally abundant at 29.5% (see Figure 7.9).

**Level Three: grid patterns**

Grid patterns are present in all survey sections of the limestone belt which have non-figurative designs, but they never consist of more than 17.3% of the motifs. Again, the highest percentage is at ME in the north-east (see Figure 7.10).

**Level Three: linear non-figuratives**

LNFs were created throughout the limestone belt in generally consistent relative frequencies, though they only comprise only a small proportion of the non-figurative catalogue, approximately 10% (CW 11.3%; MW 6.8%, RW 11.1%, CE 2.7% and ME 6.8%) (see Figure 7.11).

**Level Three: irregular shapes**

Irregular shapes are very rare in Chillagoe, usually less than 10% of the motif frequency. However, in RW, this number is slightly higher, at 16.7%, but since there are only three examples, these numbers are unreliable (see Figure 7.12).
Figure 7.7 Level Three: dot and dot variations

Figure 7.8 Level Three: open geometrics
Figure 7.9 Level Three: enclosed geometrics

Figure 7.10 Level Three: grid patterns
Figure 7.11 Level Three: linear non-figuratives

Figure 7.12 Level Three: irregular shapes
**Level Four sub-categories**

In terms of the Level Four sub-categories, again variations in the overall motif count occur, with certain motifs having higher numbers in particular survey sections. Because the meaning of the specific non-figurative motifs cannot be shared due to cultural sensitivity, a detailed examination of the distribution of particular types of Level Four motifs may not be informative, but again, different parts of the limestone belt appear to favour particular types of non-figurative motifs. In CW, for example, ‘straight lines’ are the most numerous (366 motifs), distantly followed by ‘star shapes’ (33 motifs). In CE, however, ‘dots’ (626 motifs) are produced prolifically, followed by ‘straight lines’ (317 motifs). In ME, though, ‘oval variants’ are the most numerous, with 43 examples, followed by 33 ‘star shapes’. MW is different again, with ‘dots’ most abundant (43 motifs) with ‘rectangle’ grids a distant second (6 motifs). The numbers are very small in the north, but ‘straight lines’ (4 motifs) are the most plentiful (see Appendix 1.2 - 1.7 for a detailed breakdown of the various Level Four sub-types present in each survey section).

**Non-figurative motifs summary**

The types of non-figurative motifs vary across the limestone belt, with the north-eastern part, ME in particular, displaying a frequency pattern slightly different to the remainder of the survey areas. While non-figurative forms are consistently abundant in the Chillagoe assemblage, there are definite differences in the types of non-figurative motifs produced in certain sections in terms of the forms present, showing that the limestone belt should not be considered as one homogeneous non-figurative block. The causes of this variation may arise from differentiated site use, the differing artistic styles of individual groups utilising a particular bounded geographic region, or as a result of the differing messages which the specific motifs encoded. While the underlying reasons are not easily determined, it should be noted that similar to the production techniques, the north-eastern section of the limestone belt displays the greatest variation in non-figurative forms and may have been influenced by the greater Kuku Djungan use of that region.

The Kuku Djungan assemblage at Ngarrabullgan also demonstrates a high percentage of non-figurative (“abstract”) painted designs (90%), very similar to the Chillagoe
assemblage (David and Chant 1995; David 1998a). This stylistic similarity in the painted designs is evidence of the strong socio-cultural links between the two groups. Unfortunately, it is difficult to compare the Chillagoe and Ngarrabullgan assemblages’ Level Three and Four forms since different classification systems were used in each area. In David and Chant (1995: table 67), the non-figurative paintings are divided only into five sub-categories: grids, radiating designs, geometric, other linear and infilled. While these forms appear to be similar to the Level Three types in the Chillagoe assemblage, the absence of ‘dots and dot variations’ in Ngarrabullgan would suggest that the painting of dots may not have occurred frequently in Kuku Djungan country. That ‘dots’ do not occur in ME (and RE) as well may be an aspect of the overlap of the Kuku Djungan local style on that part of the limestone belt. A closer comparison of the Level Four categories would further illuminate any local regional variation between the two assemblages, and whether these variations have any correlations with the patterns shown across the limestone belt as discussed above. Of course, the non-figurative designs at Ngarrabullgan are only painted, since no engravings are found there, a fact that clearly distinguishes the two areas.

**Figurative motifs**

Several of the specific Level Three figurative designs (anthropomorphs, and body parts) were examined in Chapter 6.9 as having possible territorial marking or signposting functions. The remaining Level Three figurative categories (material culture items and zoomorphs), however, appear to operate differently, and these sub-types, similar to the non-figurative designs, may have had site specific correlations.

As stated in Chapter 6.9, figurative designs are not common in the Chillagoe assemblage. Depictions of material culture items in particular do not feature in Chillagoe rock art, with only a single occurrence of a material culture item, a club, in CW. Zoomorphs are also infrequent across the six survey sections, accounting for 27% of all figurative motifs. Seven zoomorphic designs crop up in three survey sections: two in CW; four in ME and one in CE. Each survey area has its own distinctive animals which occur only in that specific geographic area. For example, the only depiction of an ‘echidna’ and an engraved ‘other’ zoomorph are found at the southern edge of the limestone belt, in CW. The ME survey section has unique zoomorphic representations
as well, with three ‘snakes’ and one animal with wings (categorised as ‘other’) which appear nowhere else. The sole ‘lizard’ is found in CE.

Because of the small frequency and scattered occurrences, it is difficult to determine any spatial patterning in these zoomorphic designs. Perhaps, however, this lack of consistent use is their distinguishing feature. Zoomorphs are seemingly tied to site specific contexts and are associated with particular localised areas of the limestone belt rather than spread more broadly.

There are no clear cultural links between the figurative designs of the Chillagoe and Ngarrabullgan assemblages, except for the fact that figurative motifs are also rare in the Kuku Djungan country, accounting for only 5% of the motifs (David 1998a: 146). Anthropomorphs comprise 8.1% of the Kuku Djungan figurative designs, though there are no details on the subtypes of anthropomorphs present in the shelters. Only a few zoomorphs have been recorded, e.g. a single crocodile and a snake (David and Chant 1995: Table 67). It is interesting that the only zoomorphic ‘snake’ designs found at Chillagoe are located in the ME survey section, closest to the Kuku Djungan traditional territory.

7.6 Variations across the landscape: the distribution of colours

Colour preference also displays some variability across the limestone belt particularly in the north-east. Red and white (used alone) are generally the colours of choice in each survey section. Red is the most prevalent colour in the assemblage, accounting for at least one third of motifs in each area, but with the highest incidence of use in the northern and central western parts of the limestone belt: 31.3% in CE, 41.3% in CW, 38.3% in ME, 79.5% in MW, 100% in RE and 43.5% in RW. White follows closely, generally used in 30% of the motifs in each section, except for the two sections of MW and RE where white is rare or completely absent (see Figure 7.13). The other colours are more infrequent. The north-eastern section of ME again displays a slightly different pattern than elsewhere in the karst, with the greatest range of colours employed (11 pigment combinations), including the only instance of blue paint.

The divergences in colour may reflect colour preferences by individual artists or cultural groups or be engendered by the messaging requirements of particular motifs, because
the pigment materials appeared to be sourced locally (see Chapter 3.6). Colour choice, however, is a component of the stylistic diversity in the Chillagoe assemblage. This heterogeneity is perhaps a product of the differing cultural influences in the region.

<table>
<thead>
<tr>
<th>Colour</th>
<th>CE</th>
<th>CW</th>
<th>ME</th>
<th>MW</th>
<th>RE</th>
<th>RW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>30.2%</td>
<td>41.3%</td>
<td>38.3%</td>
<td>79.5%</td>
<td>100%</td>
<td>43.5%</td>
</tr>
<tr>
<td>White</td>
<td>36.2%</td>
<td>48.9%</td>
<td>17.3%</td>
<td></td>
<td></td>
<td>30.4%</td>
</tr>
<tr>
<td>Black</td>
<td>10.8%</td>
<td>5.1%</td>
<td>16.8%</td>
<td>11.4%</td>
<td></td>
<td>8.7%</td>
</tr>
<tr>
<td>Yellow</td>
<td>13.2%</td>
<td>1.3%</td>
<td>4.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light Brown</td>
<td></td>
<td>4.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>1.2%</td>
<td>0.3%</td>
<td>8.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td></td>
<td>0.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red &amp; Black</td>
<td></td>
<td>0.3%</td>
<td>6.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red &amp; White</td>
<td>1.2%</td>
<td>2.2%</td>
<td>12.3%</td>
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<td>17.4%</td>
<td></td>
</tr>
<tr>
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<td>0.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White &amp; Orange</td>
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<td>0.3%</td>
<td>0.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow &amp; Black</td>
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<td>1.0%</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red &amp; White &amp; Black</td>
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<td>0.3%</td>
<td>2.3%</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Figure 7.13 Distribution of colours used in the six survey sections*

### 7.7 Conclusion

The Chillagoe assemblage was not homogeneous. Certain features of the rock art, such as specific production techniques, motif forms and colour palette, varied across the limestone belt. While particular aspects of the rock art appear to have more localised associations, primarily the zoomorphic designs and some non-figurative sub-designs, other rock art elements such as stencils and engravings exhibit clear differences in their geographic distribution. The north-eastern district of the limestone belt particularly is distinguished by the near absence of engravings, the highest concentration of prints, the most diverse non-figurative catalogue and the greatest colour range. The western and southern sides, on the other hand, display the highest concentration of stencils and an emphasis on engraved motifs.
In the model of information exchange, stylistic diversity in a locale can represent expressions of cultural differences and distance. The individual cultural identities of various groups are manifested in a variety of stylistic choices in different locations. The territorial boundaries and spheres of interaction between groups may be visible in the rock art motifs.

The variations in the stylistic characteristics of the Chillagoe assemblage appear to mirror the cultural identities of the local groups surrounding the limestone belt, at least in the recent past. The heterogeneity in the assemblage is likely connected to the individual groups who heavily used a section of the towers, whereby the north-eastern section in particular displays the stylistic characteristics of the Kuku Djungan people whose territory abutted that part of the karst formation. The southern and western parts of the limestone belt, on the other hand, demonstrate close ties to the Wakaman people. The changes in the rock art motifs appear to trace the overlap of the differing traditional territories. They are the manifestation of the intersection of the two different rock art traditions along a common boundary.

The Chillagoe assemblage demonstrates that the messaging found in rock art on boundary areas can be complex, reflecting elements of close cultural connections in some features (as discussed in Chapter 6), but also showing the individual characteristics of differing groups who came into contact in the landscape. The social messaging encoded in the Chillagoe rock art was a complicated combination of group cohesion and individual identity. Particular facets of the rock art indicate close cultural ties between groups (in the late Holocene) while other parts of the assemblage signify differences and divisions. The rock art of boundary zones, at least in the Chillagoe case study, because of the multifaceted, layered interaction between groups and the flow of influences across the landscape, encodes information of both connections and boundaries, of close cultural ties and distinct local identities.
Chapter 8 Regionalisation on the Boundary: The Chillagoe Case Study

8.1 Introduction

While the previous chapter discussed how the local groups imprinted their particular individual styles on different sections of the limestone belt, this chapter expands the context to show how those local manifestations of stylistic diversity are part of wider geographical and regional trends. As presented in Chapter 4.2, regionalisation is a useful model for studying the archaeological assemblages of social groups. In the Australian context, the regionalisation and intensification model predicts that when under pressure (from a range of causes), social groups may fracture and realign with altered territorial boundaries and cultural traditions. These newly formed groups may then develop ritual and social practices different from their neighbours, coalescing, in terms of rock art, into pockets of stylistic cohesion distinct from adjacent areas. These regions of stylistic similarity are known as rock art provinces.

The purpose of this chapter is not to rehash the stylistic characteristics of the major rock art provinces of north Queensland, since extensive prior studies have largely determined the boundaries of the differing rock art precincts and their associated socio-cultural networks, which emerged in the mid to late Holocene (e.g. see Cole and David 1992; David 2002; David and Chant 1995; David and Cole 1990; David et al. 1997; David and Lourandos 1998; Layton 1992; Morwood 2002). The major Queensland rock art provinces are relatively well understood. This chapter, however, distils those regional differences down to a local level, to focus on the borders of several of the large rock art provinces which intersected at Chillagoe.

The Chillagoe limestone belt is an ideal region to investigate the effects of regionalisation on boundary zones because it represents the sphere of overlap between groups who had access to the resource-rich northern part of Queensland and groups who were linked to the semi-arid interior of the state. This chapter explores the extent to which the karst area being a linguistic and cultural boundary during the time of great regional shifts and pressures in the late Holocene may have impacted the characteristics of the Chillagoe rock art. The Chillagoe case study may provide insight into what
happened on the edges of the large rock art provinces and whether the model of regionalisation fully explains the apparent stylistic shifts in the Chillagoe assemblage. The changing story of Chillagoe rock art provides a window into the complex effects of regionalisation.

8.2 The rock art provinces surrounding the Chillagoe region: a brief summary

Before discussing the effects of regionalisation on boundary area assemblages, it is important to provide an overview of the differing rock art precincts of northern Queensland which surrounded the Chillagoe karst. As stated in Chapter 7, different Aboriginal groups with diverse linguistic families and associated extended socio-cultural networks interacted at the Chillagoe limestone belt. The local cultural connections between the Chillagoe assemblage and the groups directly to the north (the Wakara) and to the east (the Kuku Djungan) were examined in Chapter 7. Now, the geographical context is widened to investigate how the larger regional forces shaped the Chillagoe assemblage.

![Figure 8.1 Map of selected rock art areas in northern Queensland](image)

The Chillagoe-Mungana karst is sandwiched between two of the major rock art provinces in northern Queensland. North of Chillagoe lies the primarily figurative rock
art precinct of Cape York of which sites in the Mitchell-Palmer limestone belt are the closest geographically to Chillagoe. To the south-west, the stencil and engraved artistic province of the North and Central Queensland Highlands is located (see Figure 8.1). Each of these large rock art provinces have complex internal variations, but for the purposes of this chapter, these two rock art regions are treated as stylistically similar blocks.

### 8.3 To the north: the Mitchell-Palmer limestone belt

Approximately 70 km north of Wakara territory, a northern section of the limestone belt reappears, the Mitchell-Palmer karst, similar to the geology of the Chillagoe-Mungana district (see Figure 8.1). The Mitchell-Palmer limestone belt is roughly 60 km in length, squeezed between the Mitchell River (in the south) and the Palmer River (to the north). The limestone was deposited during the Upper Silurian and Lower Devonian (c. 400 million years ago) period, comparable to the Chillagoe-Mungana section (David and Chant 1995; David et al. 1997). Also akin to Chillagoe, people began using the caves and rock shelters in the Mitchell-Palmer karst in the Pleistocene.

Four caves have been excavated in the Mitchell-Palmer limestone belt: Hearth, Mordor, Mitchell River and Hay Cave. Excavations at Hearth Cave establish that occupation in the area began at 21,500 BP ± 250 BP, and like other regions, deposition rates increased, including ochre, after 3500 BP, suggesting that the area had intensive use in the late Holocene (David and Chant 1995: 381). Hay Cave demonstrates a similar pattern, although occupation began earlier, ca. 30,000 BP, and the most intensive use of the cave began ca. 3100 BP until the modern period (David 2002; Lourandos et al. 2012: 52). Pleistocene occupation dates were also found in Mitchell River Cave, where the cave was first used sometime before 15 910 ± 200 BP, while in Mordor Cave occupation began much later, approximately 1500 BP (David et al. 1997: 71; David 2002).

While similar to Chillagoe in terms of geology and Pleistocene occupation dates, the rock art motifs of the Mitchell-Palmer area differ from the Chillagoe assemblage not only in pigment types and lack of stencils but also in the relative frequency of the engravings (David and Chant 1995; David et al. 1997). Thirty seven rock art sites have been recorded, with over 1093 motifs catalogued (David et al. 1997). The rock art of the
Mitchell-Palmer karst appears to be homogeneous, with no great differences in motif types between the southern and northern end of the limestone belt (David and Chant 1995; David et al. 1997). The rock art exhibits a predominance of figurative, polychromatic anthropomorphs and zoomorphs. This stylistic difference is considered to be a product of Holocene regionalisation trends (Cole 1995; David 1998a; David and Cole 1990; David et al. 1997; Flood 1997; Morwood 2002; Morwood and Hobbs 1995). While potentially older, highly patinated engraved motifs are present in the Mitchell-Palmer karst, but they are less frequent and differ in form from similarly patinated engravings in the Chillagoe-Mungana limestone belt.

Paintings predominate in the Mitchell-Palmer assemblage, though stencils, prints and engravings also occur in “smaller numbers” (David et al. 1997). David and Chant (1995) report 93.3% of pictures were painted in both the Mitchell River and Palmer River limestone areas (David and Chant 1995: 463). The majority of these paintings are stylistically dissimilar to Chillagoe due to their figurative designs.

Drawings occur in the Mitchell-Palmer limestone belt, but again, similar to David’s reporting of the rock art at Ngarrabullgan, David et al. (1997: 60) and David and Chant (1995) combine the drawn motifs and paintings together into the single category of “painting” making it difficult to compare the two production techniques. At least two charcoal drawn grids and radiating designs in the karst were AMS radiocarbon dated, however, so, while the exact numbers are unclear, non-figurative charcoal drawings are present in the Mitchell-Palmer assemblage (David et al. 1997).

Stencils are infrequent, with only one stencil recorded in the Palmer River limestone, and thirty five, including one material culture stencil and one hand print, found in the Mitchell River karst (David and Chant 1995).

Engravings are present, but they represent only a small percentage of the rock art assemblage there (approximately 7.0%) (David and Chant 1995: 464). The infrequency of the engravings and the relative lack of cupules distinguishes the Mitchell-Palmer limestone from the Chillagoe assemblage to the south. However, David and Chant (1995) do report 15 ‘peckings’ in the Mitchell River limestone which are primarily non-figurative, comprised of “grids, radiating designs, geometric and other linear” designs, with a single representation of macropod tracks and an engraved figurative bird. In the
Mitchell section of the limestone belt, the peckings are of non-figurative designs and macropod tracks, with only a single pecked bird track located (David and Chant 1995: 464). In Hearth Cave, David and Chant (1995: 465) mention two sets of “deeply pecked pits” lying under two pigment designs. These pits are the only detailing of cupules throughout the Mitchell-Palmer limestone belt and are older than the painted motifs in that cave (David and Chant 1995: 465). While Hay Cave has 92 motifs, all but four are painted or drawn (Lourandos et al. 2012: 50). Hay Cave has no cupules, with 4 “moderately patinated” engravings present: 2 bird tracks, and 1 linear non-figurative and 1 generalised zoomorph, possibly a lizard (Lourandos et al. 2012: 50).

Ten pecked motifs (3.5%) were found in the Palmer karst further to the north, again primarily of non-figurative designs, although two bird tracks also occur (David and Chant 1995). The engraved motif forms found in the limestone belt are all “highly patinated” peckings “probably of considerable antiquity” (David and Chant 1995: 464). Similar to David and David’s (1988) initial surveys of the Chillagoe limestone belt, however, the presence of abraded lines in the shelters was noted but not included in the results so it is difficult to compare this engraving type for the two districts (David and Chant 1995: 463).

The Mitchell-Palmer karst’s paucity of engraved art suggests that the tendency towards engraving in this part of north Queensland appears to have cultural motivations. Even though the Mitchell-Palmer limestone is geologically identical to the Chillagoe karst, the two assemblages have a very different emphasis on engraving.

Prints are exceedingly rare, with only one hand print recorded in the Mitchell River limestone karst and none in the Palmer River limestone (David and Chant 1995).

Combination motifs are present in the Palmer River karst, though in small numbers. David and Chant (1995) report 7 ‘composite’ pictures, or 2.5% of the production techniques found. No combination motifs are reported in the Mitchell River limestone belt (David and Chant 1995).

Unlike Chillagoe, the majority of paintings to the north of the Mitchell River are anthropomorphs (76% of pictures recorded) with twenty one differing anthropomorphic types being documented (David et al. 1997: 60). The most common subtype of anthropomorphs (89%) is ‘generalised’ which roughly equates to the ‘simple’
anthropomorphs found in the Chillagoe, with “elongated” torsos and usually monochromatic infill (David et al. 1997: 61). Zoomorphs are also present in the Mitchell-Palmer assemblage, but in lower numbers (8% of pictures) (David et al. 1997: 65). Zoomorphs are predominately flying foxes and dogs, though lizards and echidnas (plus other forms) also are present (David et al. 1997).

Non-figurative designs are found in much smaller numbers north of the Mitchell River, a clear difference between the two regions which has been detailed previously as evidence of two differing socio-cultural spheres with very little interaction (see Cole and David 1992; David 1998a; David and Chant 1995; David and Cole 1990). For example, non-figurative pictures in the Mitchell-Palmer karst comprise 15% of the paintings (David et al. 1997). It is difficult to directly compare the non-figurative subtypes (Level Three and Four), but similar motif categories are found, although in a much smaller range. David et al. (1997: 68) describe ‘linear non-figuratives,’ ‘circles and circle variants,’ ‘grids,’ ‘radiating lines,’ ‘arcs’ and ‘complex non-figurative forms,’ all of which appear in the Chillagoe assemblage though the Chillagoe assemblage has a greater number and diversity of sub-types.

Track designs similar to Chillagoe’s are found in the Mitchell-Palmer limestone, although they comprise only 2-3% of the paintings recorded (David and Chant 1995; David et al. 1997; David 1998a: 146)

The Cape York and Quinkan rock art province, which lies to the north of the Mitchell-Palmer zone, will not be discussed in detail in this chapter. Although it should be noted that archaeological projects in the Quinkan area indicate that occupation in southern Cape York began about 37,000 years ago and lasted to European contact, an increasing diversity of rock art motifs (dissimilar to Chillagoe), stone tool types and ochre deposition rates all peaked in the last 5000 years (Cole 1995; Cole and Watchman 2005; David 1996b, 1998 a and b; David et al. 1997, 1999; Flood 1997; Flood and Horsfall 1986; Morwood et al. 1995; Morwood and Hobbs 1995; Morwood and Jung 1995; Trezise 1971).
8.4 To the south-west: the North and Central Queensland Highlands

The North Queensland Highlands (NQH), a wide geographic area stretching from Chillagoe through the interior of Queensland, is the major rock art province that borders the Chillagoe-Mungana karst on the southern side (see Figure 8.1). While the rock art of the North Queensland Highlands has some differences with the Central Queensland Highlands (CQH) province further to the south, mainly in the more limited numbers of motif techniques present in the NQH (see Wade et al. 2011), for the purposes of this thesis, because of the broad similarities between the two provinces, they will be treated here as a single rock art precinct. The rock art of this area largely consists of pecked and abraded engravings of predominantly geometric motifs and stencils of objects such as human hands, arms, feet, material culture (e.g. boomerangs, axes, spears, shields, shell pendants) and unusual items like dingo paws (see Godwin et al. 1999; Gorecki et al. 1992; Morwood 1978, 1986, 1990, 2002; Morwood and Godwin 1982, 1987; Wade et al. 2011; Wallis et al. 2004; Westcott et al. 1999). Morwood (2002) distinguishes between three phases of rock art production in the CQH, with highly patinated pecked engravings the oldest, dating to more than 5000 BP (Morwood 2002: 218). The second phase, produced between “5000 BP and 36 BP”, has representations of various techniques, including painting and stencils (Morwood 2002: 215). The last phase of rock art is the most recent (between “140-36 BP”) and is characterised by the use of white pigment and grid designs (Morwood 2002: 220).

Excavations at various sites through the district demonstrate that the region had a low density of population prior to 9000 BP, and like other parts of north Queensland, the population and resource use intensified in the late Holocene, and the rock art assemblage become more diversified, though it remained largely consistent across a broad area as a product of a large, open social network, due to the limited resources of the semi-arid environment (Lilley and Ulm 1995; Morwood 1978, 1986, 1990, 2002; Morwood and Godwin 1982, 1987).

While stencilled art dominates the North Queensland Highlands (NQH) and the Central Queensland Highlands (CQH) rock art provinces, paintings of “simple, geometric designs” also occur (Morwood 2002: 234). Paintings in the NQH are much more infrequent than Chillagoe. In the Middle Park rock art assemblage, for example,
paintings only occur in small numbers, found only in three sites (3.4%) (Wade et al. 2011: 25).

Drawings are not expressly mentioned as a feature of the NQH rock art assemblages. Whether that is because, similar to David et al. (1997), they were not recorded separately from paintings, or whether they simply do not occur, is unclear. Because paintings overall are less frequent than other rock art production types in the region, it is safe to assume that if drawings were produced, they do not have significant numbers.

Engravings are a large component of NQH rock art, but with intra-province variations. In Middle Park, for example, engravings are rare with primarily “lightly pecked, circular motifs” deemed to have a relatively recent production date, because of their “fresh” appearance (Wade et al. 2011; Wallis et al. 2004: 47). Elsewhere in the NQH and CQH, engravings are more abundant and appear to have been made in a few time phases, similar to the Chillagoe assemblage. Highly patinated pecked engravings are mid-Holocene in origin, dated to more than 5000 BP (Morwood 2002: 218). These oldest engravings had a narrow motif stylistic range of “tracks, arcs, circles, lines and pits” (Morwood 2002: 218). Dates of occupation at the oldest sites in the Central Queensland Highlands are Pleistocene (ca. 19 000BP), and Morwood notes that this earliest style of engraving may represent a local variation on the Panaramittee type engravings that are found elsewhere across the continent (Morwood 2002: 215). While cupules (“pits”) and bird tracks are present, similar to the Chillagoe range of motifs, even this earliest phase of rock art production shows a wider range of motif types than are present in Chillagoe, with peckings of human hands, feet, macropods and a range of non-figurative designs (Morwood 2002: 215). In the NQH, a similar range of potentially early deeply pecked engravings is also found, again mainly “circles, spoked circles, radiating lines, arc pits and tracks” (Morwood 2002: 235).

The second phase of rock art of the CQH produced between 5000 BP and the modern period has representations of various techniques, including paintings and stencils (which may have been present in the early phase but have not been preserved because of taphonomic factors) as well as the first instances of a pecked and abraded vulva motif. Cupules still occur, but they number less than other engraved motif types and are often present in mixed motif panels, where they are one of a range of designs (Morwood
In the NQH, the shallower, recent engravings have a narrower range of forms, “pecked circles, arcs and tracks” (Morwood 2002: 235). Abraded lines also figure in the NQH rock art assemblage in certain areas such as Mickey Springs 34 where vertical abraded lines predominate (Morwood 1990).

Prints in the NQH rock art province are present but not abundant. For example, in the Gregory Ranges, south of Georgetown, in Middle Park, Wallis et al. (2004: 47) report only a single shelter with hand prints, out of 77 shelters that contain rock art. Wade et al. (2011:88) working in the same area, with 88 sites (overlapping with Wallis et al. 2004), report only 2 prints. Morwood (2002) does not mention any prints at the sites he recorded in the NQH.

Combination motifs do not appear to be present in large numbers (if at all) in the NQH rock art assemblage. Morwood (2002) does not report any combination motifs for sites, and neither does Wallis et al. (2004) or Wade et al. (2011). Whether this lack of combination motifs is a result of recording methodology or whether it stems from an absence of this motif production type in the region is unclear because multiple production technique types (stencilling, engraving and painting) do occur in the area, often on the same panels.

Figurative designs are uncommon in the NQH province. For example, only a single engraved lizard is reported in the entire Middle Park assemblage (Wade et al. 2011: Wallis et al. 2004). Anthropomorphs and zoomorphs occur further south in the CQH Province, but always in low numbers (Morwood 2002). Engraved hands, however, are present in the CQH, but they are not the predominate motif found (Morwood 2002).

Non-figurative motifs are commonly produced in the NQH and CQH, though they are less abundant than stencilled motifs. The non-figuratives in the semi-arid interior also appear in a different range of forms though they are broadly similar to Chillagoe. Tracks are also a characteristic of the engraved art of the NQH and CQH, where they occur in multiple forms (Morwood 2002).

These two rock art provinces, the Mitchell-Palmer limestone belt, an extension of the expansive figurative province of northern Queensland, and the NQH and CQH, the stencil based artistic province of the semi-arid interior merge at the Chillagoe-Mungana
karst. These precincts provide the social and cultural context for the complex interplay of groups who mingled along the limestone boundary.

8.5 Superimpositions of the Chillagoe rock art

Before discussing the effects of regionalisation on a particular rock art assemblage, an understanding of the chronology of rock art styles of a region is essential in order to tease out when various features of the rock art assemblage developed their distinctive stylistic characteristics. For the Chillagoe assemblage, it is possible to develop a relative chronology of the phases of rock art production based on various strands of evidence. The direct dating results (Chapter 3.15), the iconography of motifs (Chapter 3.11), the presence of unstable pigments (Chapter 3.11), and any patterns of superimpositioning of motifs on the rock art panels provide chronological context. Many of these pieces of data have been discussed in earlier chapters. The superimpositions of the Chillagoe motifs are presented here.

As noted in Chapter 6.6, the majority of sites in the Chillagoe have a low density of motifs and little superimposition. Even when sites do have superimposed rock art images, often the layers are difficult to discern due to weathering, bleeding of the pigments or damage to the panels. At nine sites, however, some patterns of positioning can be determined (see Table 8.1).

<table>
<thead>
<tr>
<th>Underlying painting or engraving</th>
<th>Overlying painting or engraving</th>
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<tbody>
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<td>Yellow</td>
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<td>Black</td>
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<td>White (faded)</td>
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<td>Deep engraving</td>
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*Table 8.1 Number of sites with motif superimpositions*
These superimpositions, coupled with the results of the direct dating projects and other clues, provide the framework for a relative chronology.

When the rock art and excavation results (Chapter 3), the traditional knowledge of the Wakaman people (Chapter 6), the socio-cultural networks of the region are all added into this evidence mix, the story of the Chillagoe karst rock art emerges.

8.6 The story of the Chillagoe karst rock art

*Phase One: Late Pleistocene to Early Holocene: deep engravings, paintings and stencils*

Sometime after 30,000 years ago, Aboriginal people moved into the Chillagoe karst region. They began to occupy the caves and rock shelters and to produce deeply engraved rock art motifs at sites through the limestone belt, primarily in the west and in the south. These deep engravings were non-figurative designs, mostly in the form of cupules. Later, the Traditional Owners added numerous abraded lines to adorn the edges of the motifs.

During this time, the Aboriginal people carving the rocks in Chillagoe had a shared art tradition and cultural connection which stretched north into Cape York and south, down through the interior. Deeply patinated engravings similar to the Chillagoe motifs are found throughout northern Australia, comprising part of a rock art tradition considered one of the earliest in Australia, possibly dating from the terminal Pleistocene and early Holocene (or even potentially older) (Chalpouka 1993; David 2002; David and Cole 1990; David and Lourandos 1988; Rosenfeld et al. 1981; Taçon and Chippendale 1998; Taçon et al. 1997; Walsh 1994; Welch 1993, 2007; Wright et al. 2014). The direct dating of the ‘star-burst’ motif at the Walkunders site in Chillagoe supports this early Holocene production, returning a minimum age of 7085 ± 135 BP (Watchman and Hatte 1996, see Table 3.1).

These deeply engraved cupules, or ‘pits’ as they are sometimes referred to, occurred throughout large sections of Queensland. Flood (1997) reports cupules, along with other engraved motifs dating to at least 8500 BP, at Green Ant shelter associated with the earliest occupation evidence. In the Early Man site on Cape York, Rosenfeld et al. (1981) details multiple cupules, grid, track and maze designs, all highly patinated,
reliably dated to ~13000 BP due to their presence under excavated deposits. These non-
figurative motifs shared stylistic characteristics with engravings found at other sites
across Cape York, all of which represented a probable “early” art tradition, dating to the
late Pleistocene (Rosenfeld et al. 1981: 86). The deeply engraved designs in the caves of
the Mitchell-Palmer karst are an extension of this tradition (see section 8.3). A newly
recorded site in the Wallace Creek karst, the northern most outlier of the Mitchell-
Palmer formation also has a grouping of highly patinated cupules in Gibson’s Cave
(Winn and Buhrich 2014). These newly recorded cupules link the engraved tradition
from the limestone of the Chillagoe belt stretching all the way north into the sandstone
country of Cape York.

The non-figurative engraved art tradition extended south through the interior of
Queensland with a number of sites in the North Queensland and Central Queensland
Highlands dating to before 5000 BP (see section 8.4). This expansive socio-cultural
network appears to reach all the way to southeast Queensland in the mid-Holocene.
Cupules and other engraved motifs are found in large numbers at the Chalawong art
site, south of Gatton, at the base of the Great Dividing Range. The sandstone shelter
was used from about 4000 years ago, one of a number of sites in southeast Queensland
that showed increased occupation and rock art production after 6000 BP (Morwood
2002: 30). The shelter was first recorded in 1884 by Henry Tyron, who noted the
resemblance between the rock art designs and body scarring patterns of local Aboriginal
groups (Morwood 2002). Re-recordsed by Quinnell (1972), cupules, or “drilled holes”
represent 61.86% of the engravings present (240 examples), while “simple linear
grooves” are the next most numerous, comprising 14.43% of the total motifs (Quinnel
1972: 219). These non-figurative engravings are similar in technique and style to the
Chillagoe-Mungana cupules and abrasions. The cupules at Chalawong, however, are not
the most “visually prominent” motif (Quinnell 1972: 219). Although the cupules and
linear grooves are the most numerous, the engraved ‘u’ shapes, tracks and ovals are the
most dominant motifs on the 12 sq. m panel (Quinnell 1972).

Interestingly, while this extended network was in place south through the interior and
north into Cape York, there was seemingly little interaction between the Traditional
Owners inhabiting the Chillagoe karst and people contemporaneously inhabiting nearby
Ngarrabullgan to the north-east. Nor was there apparent cultural contact further east as
well, closer to the coast, probably due to the limited occupation of eastern areas at this
time.

Although Chillagoe was part of an extended early Holocene network, even in this
earliest phase of engravings, Chillagoe had a locally distinct style. Chillagoe’s deep
engravings, while they follow the general non-figurative tradition, differed from other
engraving sites in Queensland because they were composed mainly of cupules. Cupules
dominate at Chillagoe, being the most widespread of the deeply engraved motif types,
located in all survey sections which incorporate engravings. They are also the primary
engraving motif type in numerical terms, exceeded only by abraded lines, which are
usually found in association with the carved pits. While other deeply engraved motifs
types, such as tracks and star shapes, do occur in the Chillagoe assemblage, they are
found in smaller numbers, with only a few examples at each site. The primary emphasis
on cupule production distinguishes the Chillagoe early assemblage from other
comparable rock art regions in Queensland (see Figure 8.2).

The deep engravings at Chillagoe, with the preponderance of cupules, demonstrate
localised variation of the Pleistocene artistic style. Regionalisation in the Chillagoe
karst was evident from the oldest motifs produced. In this particular part of north
Queensland, distinctive assemblage differences appear in the early Holocene (or
possibly before).

The Traditional Owners visiting the karst towers likely produced paintings and possibly
stencils during this first phase as well, but these pigment motifs are generally no longer
visible (see Goodall et al. 2009; Watchman and Campbell 1996; and Chapter 3).

**Phase Two: Mid to Late Holocene: charcoal drawings**

In the mid to late Holocene, change came to the karst. Aboriginal people began to use
parts of the limestone belt more intensively. New caves were occupied for the first time,
and black charcoal drawings appeared in the rock art, dating to 3500 years ago. Drawing
at Chillagoe then continued until modern times.

The charcoal drawings were a continuation of Chillagoe’s non-figurative local style.
These designs also shared a weak stylistic and cultural connection with the districts to
the north, with a few similar motifs being created by people inhabiting the Mitchell-Palmer karst at this time.

Figure 8.2 Deeply engraved cupules and abraded lines on a boulder at site CE22
Phase Three: Mid to late Holocene: yellow, red, faded white pigments, stencils

After this drawing phase, at least at several sites, the Traditional Owners created a multitude of paintings in yellow, red and now faded white pigments, placing these coloured motifs on top of the charcoal drawings. Painting became increasingly emphasised. In some caves of the karst, the presence of ochre increased in the archaeological deposits, perhaps reflecting the growing prominence of rock art production and ritual practice in the sacred landscape. Stencilling continued and seemingly grew in prominence as well (see Chapter 3.18; Goodall et al. 2009).

The non-figurative painted tradition was now in full swing, and non-figurative designs often mirrored the older engraved forms. These non-figurative paintings shared close stylistic links with the Kuku Djungan people to the north-east, a manifestation of the strong cultural connections and the overlap of the two groups, the Wakaman and the Kuku Djungan, who met at the edges of their respective traditional estates to partake in communal ceremonies.

The groups who came to the karst in this period interacted in the landscape in an organised, formalised way, marking the territory and strengthening their social, cultural and political affiliations. The Traditional Owners camped along the river courses in multiple open sites, and they gathered in large, open rock shelters and placed multiple layers of motifs on the exposed walls. Smaller sites ringed these central shelters functioning as signposts, lookouts or as spaces for smaller group activities. Rock art was a signalling method of controlling access and movement of people through the landscape. Aboriginal people entered the dark and twilight zones of the caves for highly secret ceremonies, and they placed large numbers of stencils and prints in the sacred depths of the limestone towers.

The rise of the painted non-figurative style in the mid to late Holocene has been argued to be a reflection of increased regionalisation mainly as a result of intensification (Barker 2004; David 2002, 2004; David and Chant 1995; David and Cole 1990; David and Lourandos 1988; Flood 1980; Lourandos 1983; Lourandos and Ross 1994; McNiven 1999; Morwood 2002). In many ways, however, the stylistic signature of the Chillagoe assemblage was already well established by this point. After the development of the non-figurative deep engravings in Phase One, the ‘Chillagoe style’ is largely
stable through time. Different production techniques appear in the assemblage in the mid-late Holocene, but this increased visibility may be a product of taphonomic factors rather than from any cultural shift. The Phase Three painted motifs often replicate earlier engraved forms (see Figures 8.3-8.6). The only seemingly new additions to the rock art catalogue are the figurative designs positioned on the geographic edges of the karst and stencils. The figurative motifs perhaps were a consequence of the contact between neighbouring groups, especially with the communities to the north who were painting large numbers of figurative designs in this period. Stencils too, apparently increase, and these large numbers of stencils represent connections to the semi-arid interior socio-cultural network.

The mixture of figurative, non-figurative and stencil designs in the Chillagoe assemblage mirrors the blending of the complex regional influences in Queensland at this time.

![Figure 8.3 Stylistically stable motifs: deeply engraved 'star' (left) and painted 'star' (right)](image-url)
Figure 8.4 Patinated engraved cupules (left) and painted ‘dot series’ (right)

Figure 8.5 Abraded lines (left) and painted lines (right)

Figure 8.6 Hand print (left) and engraved hand (right)
Phase Four: Late Holocene: bright white pigment and shallow engravings

In the more recent past, Aboriginal people in the limestone belt placed bright white motifs on top of older red, yellow and now faded white designs. The white kaolinite pigment they used for these motifs is unstable and not long-lasting. The series of dingo prints on the ceiling of CW11 in kaolinite helps to date these designs to sometime after the introduction of the dingo to Australia at least 4000-5000 years ago (see Fillios and Taçon 2016). More likely, these designs were painted fairly recently.

People in the karst also began to carve shallow engravings which have a ‘fresh’ appearance and are positioned over some painted designs. These shallowly engraved motifs mirror earlier deeply engraved forms. The unpatinated designs are stylistically similar to the contemporaneous engravings of the North and Central Queensland Highlands. The presence of these younger engravings on western and southern sides of the limestone belt, in Wakaman country, shows the strong cultural connections with the semi-arid interior.

Phase Five: Late Holocene to the present: large bi-chrome motifs

Most recently, the Traditional Owner artists created large bi-chrome motifs. They placed these designs on top of older layers, and these oversized designs differ from older motifs because of they used two (or three) colours. These motifs appear to be some of the youngest in the Chillagoe assemblage. At CW25, for example, a large bi-chrome overlies painted and drawn motifs which were dated to 2056 ± 81 BP, suggesting a maximum age (David 1992a).

Rock art production and occupation of the caves and the rock shelters of the limestone belt continued to the modern period and the arrival of Europeans. Despite the upheavals and tribulations of contact times, the Wakaman people maintained their cultural traditions, passing knowledge down through the generations of the family line. Even with the advent of mining and pastoralism, and the establishment of a National Park, the karst towers remain an enduring sacred and significant landscape for the Wakaman people. The on-going challenges that they and other Aboriginal communities face to protect their cultural heritage in the modern Australian context are addressed in the next chapter.
8.7 Regionalisation on the boundary: conclusions from Chillagoe

As stated earlier, the intensification model proposes that socio-cultural changes in the mid to late Holocene caused the splintering and reorganisation of groups and resulted in the emergence of differing regional artistic styles throughout Australia. While these stylistic shifts are evident in many regions during the late Holocene, the Chillagoe-Mungana limestone belt does not completely fit this model.

Regionalisation in this part of northern Queensland was not a straightforward linear progression. While other areas changed from the early non-figurative engraved tradition to stylistically varied bounded territories in the last 5000 years, Chillagoe did not. Regionalisation, in the Chillagoe assemblage, happened early with a localised variant of the Pleistocene art signature emerging from the first phases of Chillagoe rock art production at least 8000 years ago. Chillagoe, from the beginning, had its own local flavour. This early individual Chillagoe style then stabilised, with later painted forms mirroring the early non-figurative engravings. The majority of the stylistic features of the Chillagoe assemblage displayed continuity. Other rock art provinces with diverse motif types sprung up around the karst, but the Chillagoe assemblage largely remained stylistically consistent. Surrounding regions in northern Queensland began to vary in the mid-Holocene, such as to the north in Cape York, where there was a seeming explosion in the diversification of figurative painting and to the south, with the emergence of the stencilling traditions in the Highlands, but the Chillagoe rock art did not fluctuate to any great degree. In the late Holocene, when regionalisation and stylistic change was accelerating in the districts around the karst towers, the Chillagoe assemblage only changed slightly, incorporating greater numbers of stencils and a few figurative motifs. These additions to the assemblage were likely a result of the local regional forces ebbing across the karst towers, as the stencil based traditions of the south and west met the painted traditions of the north and east.

The Chillagoe example demonstrates that regionalisation is complex, and in some geographic areas in Australia, not solely a mid-late Holocene development. The Chillagoe case study indicates that the forces of regionalisation were not uniformly felt through northern Queensland and that regionalisation pressures may have impacted the boundary areas of the stylistic provinces differently than the centres of rock art.
precincts. In other words, the pressure to develop a regionally distinct style may have been less along the borders of the large rock art provinces. The rock art style of the border area at Chillagoe, for instance, remained largely stable over thousands of years, perhaps because boundary rock art may perform different types of social messaging than motifs located in the heart of traditional territories. Also, the amount of regionalisation pressure on an assemblage may depend on the activities associated with a particular landscape. Regions which have a primary ceremonial focus (such as Chillagoe) or areas where other types of subsistence and secular occupation activities are more prevalent may cause a different degree of variation in the assemblage over time. The level of visitation may affect the rate of change in a particular assemblage as well. Places like Chillagoe which are visited to a lesser degree than other parts of the traditional estates may stay stylistically stable for longer periods. The Chillagoe assemblage also demonstrates that certain aspects of the assemblage may show greater variation than others. Not all parts of an assemblage may develop regionalised characteristics. Some rock art features may maintain their stylistic integrity through time while other parts of an assemblage may incorporate outside influences.

The Chillagoe karst is only one example of boundary zone rock art, so this investigation can only begin to address some of these conceptions. What the Chillagoe karst does show is that rock art found on boundaries is multifaceted and complex. The current model of regionalisation and intensification does not fully explain the variation and continuity of the Chillagoe border zone.

More research into other boundary zones across Australia may tease out the variability and stylistic characteristics of rock art found along these border areas. As discussed in Chapter 1.3 only a few studies in Australia have been conducted in the junction zones between rock art provinces. For example, Taçon (2008) found that the Boodjamulla area of western Queensland was a key intersection of major Dreaming tracks and their associated trade routes, stretching across northern Australia. The depictions of Rainbow Serpent motifs located at Boodjamulla may have links to similar motifs in Kakadu, NT and even further west, while the associations of the region with the Red and White Wild Dog stories show connections to the northeast and southwest (Taçon 2008, 2013). Studies of the rock art motifs in the Keep River region on the Western Australia – Northern territory border also showed a complex interaction of influences from the
west, east and south which fluctuated over at least 10,000 years (Fullagar et al. 1999; Taçon 2005a, 2013; Taçon et al. 2003; Ward 2004; Ward et al. 2006). In addition, recent work in the Cape York rock art precinct has demonstrated that the western edge of the province in particular displays links to the west and the southwest (with a greater emphasis on stencils and engravings), and Cole (2016) emphasises the need for further research on this significant boundary area, including directly to the south which includes the Chillagoe region. The Wollemi National Park area near Sydney has also been identified as a junction rock art region, where, similar to Chillagoe, the earlier engraved art displays links to the northwest, while younger engravings and paintings show a range of influences from a number of directions (Taçon 2013). These handful of investigations represent some preliminary work on rock art boundary areas in Australia, suggesting that the rock art motifs of junction zones and boundary areas reflect a complicated and shifting range of influences over time. These studies also demonstrate that much more research needs to be done, however, to understand fully these nuances.

Globally, as well, very little research has focused on the intersection of major rock art provinces, though several studies in south-east Asia and India have highlighted the importance of this type of investigation (see Taçon 2010, Taçon et al. 2010a, Taçon et al. 2010c). More investigation both in Australia and internationally would help to see whether other boundary zones mirror the complexity of Chillagoe karst, where the assemblage encodes many layers of information pertaining to group cohesion, local identity, stylistic change and stability through time.
Chapter 9 Cultural Heritage Management Challenges

9.1 Introduction

The purpose of this chapter is to discuss the challenges faced by Aboriginal groups and other interested parties in protecting cultural heritage sites in the current Australian economic and legislative context. While this chapter focuses primarily on Queensland, many of the issues raised here are applicable in the other States and Territories of Australia, although, of course, there are varying legislations in force in the different regions. The analysis in this chapter is based not only on research into the various pieces of applicable legislation and programs currently available, but it also grows out of multiple discussions with various Traditional Owners, not only in Queensland, but across northern Australia. During the course of this project, and throughout many years working with a variety of groups of Aboriginal people, some central themes have emerged concerning the obstacles facing communities in terms of cultural heritage protection. Many Aboriginal groups share similar concerns which cross state boundaries, and they face similar impediments and pressures regardless of their location.

This chapter begins with an examination of the current Commonwealth and Queensland State government vision for the development of northern Australia, and the resulting increase in pressure on cultural heritage sites. Then, there is a review of the various pieces of legislation that affect cultural heritage management in Australia, beginning with the International level, such as World Heritage Listing, through to the Commonwealth, State and local level. While the priority of this chapter is to focus on Queensland, since a full analysis and comparison of the various State and Territories’ cultural heritage legislation has been detailed comprehensively elsewhere (see Edelman et al. 2010; Schnierer 2010, Schnierer et al. 2011; Williams and McGrath 2014), many of the themes discussed are applicable to a variety of areas across Australia.

The chapter then continues with an outline of the current funding, professional support and community capacity building challenges faced by Aboriginal communities. These challenges are exacerbated for Aboriginal groups who do not hold Native Title over their Traditional Estates. While Native Title affords limited protection and rights of
access and negotiation (as detailed below), for Aboriginal groups without Native Title, there are increased problems in accessing funding, support and recognition for cultural heritage management. Finally, this chapter proposes some recommendations for both short-term and long-term actions to support Aboriginal communities and other stakeholders in the protection, monitoring and maintenance of cultural heritage sites.

9.2 Current government planning context in northern Australia and Queensland

9.2.1 Cultural heritage sites under pressure

Rock art and other cultural sites are vulnerable to many threats, ranging from feral animals, graffiti, weeds, weathering and pressure due to mining, pastoralism and expanding urban centres (see Agnew et al. 2015; Australian Government Department of Environment 2014; Schnierer et al. 2011; Taçon 2014a). It is estimated that there are over 100,000 rock art sites in Australia, and, as this project has demonstrated, many sites are still ‘unknown’ and undocumented, often located on freehold or pastoral holdings, falling outside of most legislative safeguards, with limited access and monitoring capacity (Taçon 2014a).

![Figure 9.1 Vandalism and graffiti at Chillagoe rock art sites](image)

Figure 9.1 Vandalism and graffiti at Chillagoe rock art sites
Figure 9.2 Mining damage near rock art sites at Chillagoe
The rock art in the Chillagoe limestone belt demonstrates the vulnerability of sites to graffiti, vandalism, and environmental degradation, with the majority of the sites found in Chillagoe exhibiting signs of damage to the rock art panels from a range of causes (see Figures 9.1 and 9.2). Even the limited number of sites which are located within the National Park boundaries, having the greatest protection infrastructure in place, such as boardwalks, barrier fences and signage, show the effects of vandalism and destruction.

9.2.2 The Commonwealth strategy to develop the north

Across Queensland and northern Australia, where the majority of rock art sites are located, the pressures on these vulnerable cultural heritage sites are only going to increase. Currently, there is a push by the Federal Government to open up northern Australia to development for agriculture, mining and population centres. In September 2014, the Federal Government released its plan, *Pivot North: Inquiry into the development of Northern Australia: Final Report*, which outlined 42 recommendations and strategies to maximise the “development of the region’s mineral, energy, agricultural, tourism, defence and other industries” through increased economic links with the Asia Pacific region, infrastructure development and the streamlining of regulations that impede growth (Joint Select Committee on Northern Australia 2014: 8). These recommendations were further strengthened in the release of *Our North, Our Future: White Paper on Developing Northern Australia* in 2015 (Commonwealth of Australia 2015a).

Population growth of the northern region was identified as being “critical” to the scheme’s success, with currently only 1 million people living in the northern region (Joint Select Committee on Northern Australia 2014: xi). The inquiry identified seven priority recommendations, including the major upgrade of road infrastructure, railways, water sources and special economic zones to promote population and economic growth (Joint Select Committee on Northern Australia 2014). Land tenure issues, such as the delays with Native Title decisions and the confusion of multiple land tenure types, is also seen as an impediment to development. The committee recommends “a systematic overhaul” of the current land tenure agreements, in particular Aboriginal land and land that falls under native title to “maximise the economic development and the employment opportunities” (Joint Select Committee on Northern Australia 2014: 194). Nowhere in either planning document, however, is a mention of the cultural values of
the region, except as a having a minor role in the tourism sector, and there is no discussion of how these major infrastructure developments and population growth will impact the thousands of cultural heritage sites that lie in the northern region, and their importance to the Aboriginal people and the wider communities who live there.

The Commonwealth Government recognises the key role that Aboriginal and Torres Strait Islander people play in northern Australia, highlighting their importance as the majority of the population and the largest landholders. The White Paper emphasises that the engagement of Aboriginal and Torres Strait Islander people is an under-utilised driver for economic growth and regional development and that the involvement of the local Aboriginal population is necessary as a labour force in the mining and health sector; however, there is little emphasis in the vision documents on the importance of the cultural heritage values of the region (Commonwealth Government 2015). The value of cultural heritage assets of northern Australia as the basis for economic growth is glossed over, and the potential for cultural heritage tourism development is not emphasised. Cultural tourism is identified as only one of a range of possible community based tourist activities which may promote employment growth in Aboriginal communities, with more prominence seemingly placed on the natural assets of the northern region as drawcards for tourism (Commonwealth Government 2015; Joint Select Committee on Northern Australia 2014: 179). While Aboriginal and Torres Strait Islander cultural activities are to be encouraged and promoted, these cultural celebrations, according to the Commonwealth Government committee, appear to rely more on festivals in the larger cities, rather than be tied to specific locations in the landscape, such as rock art sites (Joint Select Committee on Northern Australia 2014: 174). The potential twin benefits of developing community based cultural heritage tourism projects to create employment for community members on country, as well as providing ongoing protection and management of the cultural assets of the region through increased awareness and monitoring of those sites by community members, is not recognised. No additional protection measures for rock art and other cultural heritage sites and no mitigation measures for the increased pressures caused by large scale infrastructure projects are proposed. The significance of cultural heritage sites across northern Australia as both an economic and social resource is not fully explored.
9.2.3 The Cape York Regional Plan

In Queensland, the limited Governmental recognition of the cultural heritage values of the region is highlighted in the Cape York Regional Plan (CYRP). Released in August 2014, covering the region to the north of the Chillagoe-Mungana area, the CYRP is another example of the emphasis on the increased development of the northern region and the awareness of the region’s diverse natural environment, but with no acknowledgement of the large amount of rock art and other culturally significant sites that northern Queensland contains. The Cape York Regional Plan intends to develop Strategic Environmental Areas (SEA) that contain “regionally significant values for biodiversity, cultural values, water catchments and/or ecological function” in which development such as mining, large scale agriculture and dams are deemed to be unacceptable activities. The SEAs are intended, together with National Parks, to give the highest level of protection to the environmental and cultural values of an area (State of Queensland, Department of State Development, Infrastructure and Planning 2014: 4).

Under the Cape York Regional Plan, river systems and “the natural environments” of the area are acknowledged to have cultural significance to the Indigenous communities, but, again, nowhere in the document is there a mention of the rock art or other tangible cultural heritage sites, such as those found in the Quinkan Rock Art Province.

The Quinkan Rock Art Province is a rich cultural landscape that has some of the best examples of rock art galleries in Australia. Located in southern Cape York, many hundreds of rock art sites are scattered throughout the sandstone escarpments of the Quinkan region, as well as multiple sites with significant landscape features, springs, quarries, artefact scatters and places with evidence of occupation and contact (see Cole 1995, 2010, 2011, 2016; Cole and Buhrich 2012; David 1991; Flood 1997; Flood and Horsfall 1986; Morwood and Hobbs 1995; Rosenfeld et al. 1981; Trezise 1971). Many of these sites contain images of the Quinkan Ancestral Beings, Dreamtime figures that are unique to the Quinkan area. The Quinkan rock art galleries have been recognised by UNESCO for their significance, and the area has long been a key tourist asset with nationally and internationally recognised value and significance (Cole and Buhrich 2012). While the Quinkan region is currently under consideration for the National Heritage List, in the Cape York Regional Plan, the Quinkan sites are not acknowledged and are not covered by a National Park or SEA designation, leaving them to fall under
only Queensland’s Aboriginal Cultural Heritage Act 2003’s basic level of protection. Under the current plan, the area around the Quinkan galleries, arguably a world class rock art precinct with some of the best examples of rock art practice in both Australia and globally, is vulnerable to mineral development (Cole and Buhrich 2012). If the cultural heritage values of the Quinkan sites struggle to be recognised in the CYRP, smaller rock art and archaeological sites, which have significance to their Traditional Owners and local communities, yet do not have the international profile of the Quinkan rock art, are especially at risk.

Further compounding the challenges posed by this proposed increased development is the fact that many cultural heritage sites in northern Australia remain undocumented. The northern region of Queensland (and Australia) is remote and largely inaccessible, and many areas have yet to be visited by archaeologists, and the locations of many sites have not yet been fully mapped. The CYRP, however, has no provisions to support the cultural heritage surveys that would be necessary to monitor and manage the cultural heritage values of the region adequately.

Also, the Cape York Regional Plan has limited acknowledgement of the potential economic value and community capacity building arising from cultural heritage based tourism projects. There is little Government insight concerning the potential for the cultural values to aid in the development of a region, when cultural heritage sites are protected and managed in a way that feeds back benefits into the local communities.

These recent Queensland and Commonwealth level planning documents demonstrate the context and conditions that impact cultural heritage management of rock art sites in Queensland and more broadly across northern Australia. Aboriginal groups and other interested and affected parties must operate in this government and legislative framework, navigating the various levels of heritage protection that are examined in the following sections.

**9.3 Legislative context**

Having, both on a State and Commonwealth level, outlined the current Australian Government forward planning documents which serve to shape future development in regions rich in rock art and other cultural heritage sites, this section discusses the
legislative frameworks currently operating to protect and manage Aboriginal and Torres Strait Islander cultural heritage. A scope of legislation frameworks are applicable in Australia, ranging from international legislation through to the Commonwealth and State level. Each hierarchical level of legislation impacts the protection and management of cultural heritage sites differently, and the gaps in the current legislative framework pose challenges for all Aboriginal groups, particularly those groups without Determined Native Title.

The Australian Government and several of the States and Territories are in the process of reviewing their respective pieces of heritage legislation. The heritage protection legislative context currently is very fluid, and it is difficult to track all the future implications for cultural heritage management in this changeable policy environment. The Australian Government acknowledges the intricacies involved for managers of heritage places to interpret “multiple layers of overlapping government legislation…that [it] results in much complexity, confusion and inconsistency” (Australian Government Department of Environment 2014a: 19-20).

There are many major pieces of legislation that need to be navigated in order to protect and manage cultural heritage sites in Australia. The contemporary legislation framework is primarily designed as a hierarchical system, with the greatest amount of protection provided to sites that meet specific criteria of significance on either an International or Commonwealth level. Sites that do not meet the specific criteria then cascade down the system to fall under State legislation or local planning laws. The management of individual sites is impacted by this sliding scale of protection, and the challenges faced by heritage managers, Indigenous and non-Indigenous, increase with each rung descended.

9.4 International legislation

9.4.1 UN Declaration on the Rights of Indigenous people

Largely symbolic in impact, the UN Declaration on the Rights of Indigenous People was adopted internationally in 2007 (although Australia voted against it) and subsequently has filtered down to influence Commonwealth and State legislation. The Declaration establishes minimum standards for the “survival, dignity, well-being and
rights of the world’s indigenous peoples” (United Nations Human Rights 2015). While the Declaration has no real legislative force in Australia, it has been invoked by Aboriginal groups who feel that the existing State and Commonwealth heritage protection legislation has failed to protect adequately their cultural heritage sites in a particular area. In September 2015, for example, the Wonnarua Aboriginal people approached the United Nations Special Rapporteur on the Rights of Indigenous People to hear their case against Rio Tinto as an alternative method of protesting the Mount Thorley Warkworth mine expansion project in New South Wales (Kirkwood 2015).

9.4.2 World Heritage List

The main piece of International legislation that impacts cultural heritage management in Australia is the World Heritage List. Sites qualify for World Heritage status only if they are deemed to have significance on a global scale. Sites on the World Heritage list are nominated and approved when they meet at least one of ten selection criteria assessing Outstanding Universal Value in either cultural, natural, or mixed values. Embedded in the approval of the list are mechanisms to ensure the ongoing protection and maintenance of the site.

In Australia, there are nineteen World Heritage Listed areas. Only three locations (Australian Convict Sites, the Royal Exhibition Building and Carlton Gardens, and the Sydney Opera House) have been World Heritage listed solely because of their cultural values, all of which are non-Indigenous sites (UNESCO 2014). Of the four locations with mixed Natural and Cultural Values, three locations (Kakadu National Park, the Willandra Lakes, and Uluru-Kata Tjuta National Park) have primary emphasis on cultural values, while the Tasmania Wilderness region has a secondary emphasis (UNESCO 2014).

In order for locations to be World Heritage Listed, management and monitoring plans have to be developed and adhered to under strict conditions (UNESCO 2013). While global pressure can be brought, if there is concern that World Heritage Listed regions are under threat or not being managed according to the established guidelines, the day to day management falls to the designated governmental authority, or in the case of Kata-Tjuta and Kakadu National Parks, for example, a joint management arrangement with Parks Australia and Traditional Owners. In the current economic climate, in Australia,
even World Heritage listed places struggle to receive enough funding and support. In the case of Kakadu National Park, for example, ranger positions were cut in August 2014 through a redundancy program. This resulted not only in the loss of many rangers with extensive corporate knowledge of the Park and its cultural resources, but also it reduced an already skeletal Cultural Heritage Team of four to only one person tasked with covering the whole of Kakadu National Park, together with local Indigenous Ranger groups. The fact that sites with World Heritage Listing, the highest level of protection within Australia, often do not have adequate resources available only highlights the challenges faced by less recognised areas which do not receive similar funding and support.

The majority of cultural heritage sites in Australia, however, are not deemed significant enough to warrant World Heritage nominations. Even if they are, the process may become politicised, as has happened in the nomination of Cape York Peninsula. The time-consuming World Heritage Listing process is often complex and has ramifications for local populations. In Cape York Peninsula, which also encompasses the Quinkan Rock art Province, for example, the bid for World Heritage Listing became caught up in disputes between the Queensland State and the Commonwealth Governments concerning issues around consultation with Traditional Owners. The most recent deadline for nomination passed in February 2014, with no progress towards submission.

9.5 Voluntary charters and standards

9.5.1 Burra Charter and Ask First

Several voluntary charters have been adopted by various archaeological and historical organisations on a national level to outline the process by which cultural heritage sites should be assessed and managed. The two primary examples of these voluntary codes of practice are the Burra Charter and Ask First. Both charters detail processes and standards by which cultural heritage locations should be assessed and protected, however, none of the guidelines have been legally recognised, so they are strictly voluntary with no legislative power.

The International Council on Monuments and Sites (ICOMOS) developed and adopted the Burra Charter in 1979. The Burra Charter has been subsequently updated and
expanded with various sets of practice notes being released in 2013 to cover aspects of cultural heritage assessment of significance, management principles and archaeological practice. Primarily designed to set standards of best practice around heritage management of monuments and physical structures, the charter is largely ineffective as a strategy for land management or the broad scale protection of intangible cultural heritage. The Burra Charter has been adopted, however, as a guiding principle document by several State and Commonwealth Heritage Councils, such as the Australian Heritage Council, and the New South Wales, Queensland, Tasmanian and Victorian Heritage Councils (Australian ICOMOS 2014). Many practicing Australian archaeologists also use the principles of the Burra Charter to inform their site assessments and archaeological practice, but there is no legal requirement to follow or adopt any of the Burra Charter’s guidelines.

The same is true for *Ask First: A Guide to Respecting Indigenous Places and Values* that was developed by the Australian Heritage Commission as a set of guidelines for consultation with Indigenous and other stakeholders around matters of cultural heritage management and protection (Australian Heritage Commission 2002). The Ask First document outlines the necessary steps in the consultation process, providing guidance in the best practice process of identifying, involving and engaging with the various stakeholders, with Indigenous people being the central focus, so that suitable outcomes can be obtained. The Ask First guide espouses the precautionary approach (i.e. “ask” before any work is undertaken), recognising that the consultation and negotiation process needs to be comprehensive, involving all the relevant interested parties, for successful cultural heritage management outcomes to be achieved (Australian Heritage Commission 2002). While many agencies and heritage practitioners in Australia follow the Ask First guidelines, they are strictly voluntary and have no legal standing or mandate.

**9.6 Commonwealth level**

At present, Australia does not have uniform legislation for cultural heritage protection on a national level. Each individual state is largely responsible for the protection of sites within their jurisdiction, and the State legislations vary greatly in their approach and focus. There are increasing calls for a unified national approach to cultural heritage
legislation (see Pepper and Duxson 2014; Chapman 2008; Agnew et al. 2015). In December 2015, for example, the Commonwealth Government released the *Australian Heritage Strategy*, the framework of heritage priorities for the next decade. One of the key objectives of the strategy is to “improve heritage policy and process alignment across all levels of government” in order to reduce the complexities and inconsistencies inherent in the multiple legislations (Commonwealth of Australia 2015a: 30). Several individual pieces of Commonwealth legislation, however, can affect cultural heritage protection and management, although they are limited in scope and effectiveness.

9.6.1 The Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The Aboriginal and Torres Strait Islander Heritage Protection Act (ATSIIHP) was formulated in 1984 and has not been amended since. It is designed to give powers to the Commonwealth Minister to intervene to protect Aboriginal and Torres Strait Islander cultural heritage in cases where areas and objects are threatened and the State legislation is deemed to be inadequate. The legislation does not provide blanket protection, however, with only certain types of cultural heritage falling under its umbrella. For example, the ATSIIHP 1984 Act does not cover intangible heritage; sites deemed significant only for their archaeological or historical value; rock art that has no traditional significance; or natural heritage (Australian Government Department of the Environment 2014b). The legislation was intended to be used only as a “last resort,” and can only be invoked if the Minister receives an application from an Aboriginal or Torres Strait Islander person (Australian Government Department of the Environment 2014b: 3). The Act gives the Federal Minister limited powers, but the Minister can intervene to stop the development which may be threatening an area using Section 9, a 30 day emergency stop order while an investigation is undertaken (that can be extended up to 60 days), or Section 10, a long-term halt to development (Australian Government Department of the Environment 2014b).

The ATSIIHP 1984 Act is largely inadequate, however, with the Department of Environment itself stating that “various issues with the effectiveness of this ‘last resort’ approach have been identified” (Department of the Environment 2014a: 3; Pepper and Duxson 2014). Fewer than five percent of applications have resulted in successful declarations under the Act, and of those successful declarations, only five long-term stop orders were issued, two of which were subsequently overturned by the Federal
Court (Department of the Environment 2014: 3). Aboriginal and Torres Strait Islander people, however, do occasionally appeal to the Minister, when they feel that all other viable options have been exhausted. In September 2015, the Wonnarua Aboriginal people in New South Wales petitioned the Environment Minister to enforce the ATSIHP Act to prevent the expansion by Rio Tinto of the Mount Thorley Warkworth mine in the Hunter Valley (Kirkwood 2015). At the time of writing, no decision had yet been handed down. Generally, however, the ATSIHP 1984 Act rarely is invoked and has had little impact on cultural heritage protection across Australia. Because of the issues with its effectiveness, the ATSIHP 1984 Act has been flagged for review by December 2017 (Commonwealth of Australia, 2015a: 43).

9.6.2 The Environment Protection and Biodiversity Conservation Act (EPBC) 1999

The only Commonwealth piece of legislation which lends oversight to cultural heritage on a national level is provided to sites which satisfy the criteria of the Environment Protection and Biodiversity Conservation Act (EPBC) 1999 and its associated National and Commonwealth Heritage Lists. The EPBC Act is primarily environmentally focused, and it is designed as a framework “to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places – defined in the EPBC Act as matters of national environmental significance” (Australian Government Department of Environment 2013: 1). The EPBC Act has limited jurisdiction and only applies to the following nine matters of environmental significance: “world heritage properties; national heritage places; wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed); nationally threatened species and ecological communities; migratory species; Commonwealth marine areas; the Great Barrier Reef Marine Park; nuclear actions (including uranium mining); and a water resource, in relation to coal seam gas development and large coal mining development” (Australian Government Department of Environment 2013: 1). In terms of heritage protection, the EPBC Act only applies to “world heritage properties [and] national heritage places”, constraining the Minister’s powers to act only on matters that fall within those nine environmental areas, allowing the Act only to be invoked when sites of national importance are threatened (Australian Government Department of Environment 2013:1). The Minister does not have powers to overturn the individual State’s heritage
legislation, and the EPBC Act is designed only to be triggered when State processes fail to protect sites deemed nationally important.

In order to define which places the EPBC Act oversees, the EPBC Act establishes the Commonwealth and the National Heritage Lists, two parallel pieces of legislation covering sites that lie within Commonwealth owned and managed areas (in the case of the Commonwealth List) or which lie outside of Commonwealth owned land, irrespective of the land tenure of their locations (the National Heritage List). There are currently 103 places listed on the National Heritage List which provides protection for the “natural, historic and Indigenous values of national heritage significance” (Australian Government Department of the Environment 2014a: 17). Several of the World Heritage sites are also captured on the National Heritage List. The threshold for meeting the criteria for being included on the lists is high, however, and coupled with a complex nomination process, means that the lists only cover a limited range of sites (Pepper and Duxson 2014). The Commonwealth Government acknowledges that some members of the Australian community “believe that the List is incomplete and should continue to grow” (Commonwealth of Australia, 2015a: 22). There is also resistance to the concept that Indigenous culture should fall under a primarily environmental act (Pepper and Duxson 2014). The majority of Aboriginal Cultural heritage sites in Queensland are not covered by this piece of legislation with currently only Ngarrabullgan, Fraser Island and the Wet Tropics area of Queensland being recognised for their Indigenous heritage values. At the time of writing, the Quinkan rock art province was being assessed for inclusion on the National Heritage List, but the results of this process had not yet released. In September 2015, the Chillagoe-Mungana Karst region (as well as sections of the Mitchell-Palmer limestone belt further to the north) was also nominated for inclusion on the National Heritage List because of the natural, geological value of the limestone karst towers, but the nomination submission had no recognition of the cultural values of the area.

The Lists are designed to fill any gaps with State legislation, allowing the Federal Minister to intervene and stop development which may threaten sites on the Commonwealth and National Heritage Lists register. A recent review of the EPBC Act, however, proposed that many of the EPBC Act approval processes be moved to State control in order to avoid duplication and to establish a “One Stop Shop” for heritage
assessments (Australian Government Department of the Environment 2014a). The recently released Australian Heritage Strategy calls for the immediate implementation of this policy (Commonwealth of Australia 2015a). This streamlining is viewed by many legislative and heritage professionals as potentially undermining the Commonwealth oversight powers, weakening the EPBC Act and allowing the States greater influence in management decisions on heritage places (McGrath 2014; Environmental Defender’s Office Northern Territory 2014; Australian Network of Environment Defender’s Offices 2014). While only assessing 200 – 400 development applications a year, the EPBC Act provided Commonwealth oversight, especially on large, State run infrastructure projects (McGrath 2014). The concern is that by removing the overarching level of Commonwealth approval on certain projects, the States will have increased responsibility for heritage protection under their individual pieces of legislation. The States and Territories’ individual pieces of heritage legislation often have disparate aims, focus and levels of Aboriginal and Torres Strait Islander input and control, and, at present, the EPBC Act serves as the only unified, national approach to conservation issues. The differing States and Territories’ legislation have their own strengths and shortcomings, posing a range of challenges for Aboriginal groups and other heritage managers. The weakening of the EPBC oversight powers, and the removal of this protection level, may only increase these difficulties.

9.6.3 Native Title Act and Indigenous Land Use Agreements

While the focus of this chapter is to discuss the impacts of current legislation on cultural heritage management, with the primary focus being on Aboriginal communities in Queensland who do not have Native Title, it is important to understand how the Native Title Act affects and influences governmental policy, even in areas where it does not directly apply. In Queensland especially, the Native Title Act is closely embedded in the Aboriginal Cultural Heritage Act 2003, shaping the legislation and serving as the determining factor by which groups are authorised to speak for country.

The Native Title Act (NTA), passed in 1993, entails Commonwealth recognition for Aboriginal people who hold an interest and rights in land and sea areas according to their traditional connection. A Native Title claimant group may apply for Native Title rights to a particular area, and if the group passes the 12 conditions of the registration test, they then progress to being registered applicants. Their registered claim is then
assessed to see whether it satisfies various conditions and whether the claimants are able to prove their cultural association to the claimed region in terms of their identity, connection to country, adherence to traditional and cultural systems, and the relationship between their traditional systems and a particular area (NTA 1993). Native Title is granted only over certain land types. It is deemed to be extinguished on all freehold titles and in certain pastoral leases (e.g. perpetual). The NTA grants the Native Title holders only limited rights to their Traditional land, allowing access to perform traditional activities, such as ceremonies and hunting, and the right to negotiate with developers, but without bestowing the right to acquire or sell the land (NTA 1993).

While Native Title does provide for recognition for Traditional Owners, in some cases, it is a divisive, lengthy process. On-going connection to an area is often difficult to prove, especially in regions that have suffered disruption by European settlers, loss of community members through massacres and removals, agriculture or mineral development and urbanisation. Claimants for a particular region may be multiple, and the relationships within the community are often complex. There can be overlapping claims in areas that are shared by more than one group, and boundaries of traditional territories are often fluid and not easily translatable to a western style mapping system.

The Commonwealth Government recognises difficulties with the current Native Title process:

As part of native title claims management, the Federal Court now identifies priority claims for resolution. But even priority claims take approximately two years and three months to resolve, and the uncertainty continues in areas where native title remains unresolved. The time taken by the native title claims process can be very lengthy when parties are required to provide stringent tenure analysis and connection evidence, and where there is a strategic behaviour by some parties. (Commonwealth of Australia 2015b: 22)

Even while acknowledging these difficulties, the Australian Government hopes to resolve all existing Native Title claims in the next 10 years (Commonwealth of Australia 2015).

The majority of land in Queensland, at present, is not covered by successful Native Title determinations (see Figure 9.3), and only 62% of north Queensland, where there is a
higher concentration of cultural heritage sites, is covered (Commonwealth of Australia 2015b: 19). While Native Title does provide groups with recognition and a voice in negotiations, unfortunately, it is only limited in scope. Native Title holders are not allowed to veto development on their land since they are only granted the right to negotiate with developers on any proposed projects and to gain access to land for cultural and ceremonial activities. Their Native Title rights are acknowledged only on certain land tenure types, and for other land types that may fall within their traditional territories they have no say or right of access. Native Title holders under the current legislation, even when their claim has been determined and recognised, have limited power and are not afforded full economic participation in their Traditional territory (Commonwealth of Australia 2015b).

Native title is seen more and more in Australia as a cultural right; as a form of interest in land – a ‘bundle of rights’ that is different to and less substantial than interests in land held by other Australians. We can use land to practice our culture on, to hold our ceremonies on, but we can’t use the leverage it should give us to build an economic base. (Mr Wayne Bergmann, CEO KRED Enterprises 2012 in Commonwealth of Australia 2015b: 24).

Even Aboriginal groups who have Native Title still struggle. The Commonwealth Government is currently pledging $20.4 million to provide greater support for Native Title Corporations, who represent Determined Native Title claim groups, because the Government recognises that many Native Title Corporations are unable to carry out their duties, such as negotiating with developers regarding cultural heritage protection and management (Commonwealth of Australia 2015b). In addition to supporting Native Title corporations, the Australian Government is seeking to reform the land tenure and pastoral lease system to remove impediments to economic growth. While these reforms may potentially strengthen partnerships between Native Title holders and economic developers, nowhere in the planning documents is there mention of the need for increased cultural heritage protection in these regions earmarked for development, and there is no acknowledgement that much land in Australia’s north, especially in Queensland, is not covered by successful Native Title claims.

For groups without Native Title, however, their rights are further diminished. Aboriginal community members without Native Title have little power to access to their Traditional estates to perform cultural activities or to monitor their heritage sites. In
Queensland, the Aboriginal Cultural Heritage Act 2003, discussed below, is entwined with the Native Title process, using the NTA as the foundation and direction for ranking of the rights of Aboriginal people to make decisions for a particular area. The issues of the embedding of the NTA in the Queensland legislation framework will be outlined in section 9.7.

9.6.4 Indigenous Land Use Agreements

The other national piece of legislation which affects cultural heritage management is Indigenous Land Use Agreements (ILUA). ILUAs are employed across Australia, and they are voluntary agreements usually between Aboriginal groups and miners/pastoralists to set out parameters for land access, use, development and protection of Aboriginal cultural heritage. ILUAs often act in parallel or outside of Native Title Claims, and ILUAs can serve as alternative agreements which satisfy the need for Cultural Heritage Management Plans in large scale projects. ILUAs are an alternative option for Aboriginal communities and developers and land users who wish to expedite the process of developing an agreement, for example, while a Native Title case is being determined or where there is no native title claim, since an ILUA can be processed and registered generally in less than 6 months (Native Title Tribunal 2014). While ILUAs do offer more flexibility for applicants, since they can be put in place while a Native title claim is being determined, again, similar to the Aboriginal Cultural Heritage Act 2003, they are closely linked to the Native Title process, and similar problems arise when a Native Title claim fails. ILUAs must include the registered Native Title claimants (where applicable), opening the door to difficulties when a registered claim fails due to internal divisions or disputes within a claimant group (see section 9.8) (Native Title Tribunal 2014).
Figure 9.3 Map of Native Title Application and Determination Areas in Queensland reproduced with permission of the National Native Title Tribunal 2015

In Queensland, if a cultural heritage site is not in a World Heritage area, and it does not merit inclusion on the National or Commonwealth Heritage List, thus lying outside the EPBC Act, then the Queensland State heritage legislation comes into effect.

There is a division, in Queensland, between historic and Aboriginal and Torres Strait Islander heritage, and these two streams of heritage are governed under separate pieces of legislation. The Queensland Heritage Act 1992 and the associated Queensland Heritage List cover sites that have European heritage value, excluding sites that have solely Aboriginal or Torres Strait Islander cultural significance. In cases of heritage sites that may have overlapping spheres of cultural heritage value, both European and Aboriginal/TSI, such as massacre sites, multiple pieces of legislation may come into play. The Queensland Heritage list has approximately 1700 places registered, containing sites ranging from historic gold mines, pubs, lighthouses, pastoral holdings, botanic gardens, and any place deemed significant to Queensland development and history.

While the Queensland Heritage Act is beyond the scope of this thesis, it too, like many pieces of heritage legislation in Australia at the moment, is fluid and continually being amended. In late 2014, the Queensland government passed changes in the form of the Heritage and Other Legislation Bill 2014, tightening application conditions and preventing failed applications being re-lodged until after a period of 5 years (Queensland Government 2015). The amendments also cede greater powers to local councils to grant exemptions for work to be undertaken on heritage sites, potentially allowing for increased development near heritage sites where the work is considered to have little impact (Queensland Government 2015). The movement, again, is towards streamlining processes in favour of increased development.

For places which contain strictly Aboriginal or Torres Strait Islander cultural values, the Aboriginal Cultural Heritage Act 2003 and the parallel Torres Strait Islander Cultural Heritage Act are the central pieces of legislation in Queensland that protect Aboriginal (or Torres Strait Islander) cultural heritage from harm regardless of where it is located in the state. Aboriginal cultural heritage places which may be impacted by standard mining activity also fall under the Codes of Environmental Compliance. These pieces of legislation set the framework for protection and management of cultural heritage sites.
The Aboriginal Cultural Heritage Act 2003 replaced earlier Queensland heritage legislation, positioning the focus of heritage protection into Aboriginal and Torres Strait Islander control, where previously the Minister was responsible for all heritage protection decisions. While the Aboriginal Cultural Heritage Act (ACHA) 2003 Queensland has some strengths, especially in terms of acknowledging the central role of Aboriginal people in the protection and management of their cultural heritage and in the establishment of broad protection for sites, the ACHA also has inherent weaknesses, such as in the areas of compliance and enforcement and in the lack of mechanisms supporting groups who wish to protect their cultural heritage.

9.7.1 Respect and recognition of Aboriginal people

One of the key strengths of the ACHA 2003, which also differentiates the Queensland ACHA 2003 from similar pieces of legislation from the Northern Territory and Western Australia, is that the ACHA 2003 recognises Aboriginal people as being the primary protectors and knowledge keepers of their heritage. The ACHA 2003 was one of the first pieces of legislation to acknowledge that Aboriginal people should have a leading voice in matters of cultural heritage and that they needed to be involved and consulted whenever cultural heritage issues are addressed.

The Act identifies Aboriginal people as the authorities on matters of cultural heritage and that their knowledge concerning cultural heritage values must be respected. Aboriginal people, under ACHA 2003, are the drivers of what is deemed ‘significant’ in terms of cultural heritage assessment, and while this legislation also allows for suitably qualified people, such as archaeologists, anthropologists and historians to consult with Aboriginal parties and provide assistance and guidance, the Act recognises that Aboriginal people are the key decision makers and that they are “the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage” (Queensland Government ACHA 2003: 10). Prior to the ACHA 2003, Aboriginal people in Queensland had only a limited a voice in matters of cultural heritage management and protection.

9.7.2 The Duty of Care

Another key strength of the Queensland legislation is that it provides blanket protection for Aboriginal cultural heritage sites, both the tangible and intangible. The legislation
defines Aboriginal cultural heritage quite broadly, covering significant Aboriginal areas, objects or archaeological or historical evidence of Aboriginal occupation (Queensland Government ACHA 2003: 11). The foundation of the legislation is that “a person who carries out an activity must take reasonable and practicable measures to ensure the activity does not harm Aboriginal cultural heritage” (Queensland Government ACHA 2003: 20). This harm mitigation takes the form of the Duty of Care Guidelines.

The Duty of Care Guidelines (DoCG) breakdown activities into 5 categories based on the type of activity, the prior usage of the land and the likelihood of the activity causing harm to Aboriginal cultural heritage. Category 1 activities involve no surface disturbance, such as walking, photography and using existing roads and tracks (DoCG s4.3). Actions qualify for categories 2 to 4 if they will cause no additional ground disturbance or harm to Aboriginal cultural heritage in areas that have been previously developed or utilised for a range of activities, such as pastoralism, tourism and development (DoCG s4.4). Activities that have a “high risk” of causing additional surface disturbance, however, are classified as category 5 activities, and these types of activities “should not proceed without cultural heritage assessment” (DoCG s. 5.14). For Category 5 activities to progress, the development proponent must notify the Aboriginal Party for the area and seek advice about the nature of the cultural heritage at risk and attempt to come to an agreement about how to “avoid or minimise harm” (DoCG s. 5.16). Even if an agreement with an Aboriginal party cannot be reached, the developer is bound by the Duty of Care and must take all “reasonable and practicable measures” to avoid harm (DoCG s. 5.19).

The proponent of an activity which may impact Aboriginal cultural heritage can be seen to have complied with the gazetted ‘Duty of Care’ guidelines in a range of conditions. The Duty of Care may be satisfied, for example, in the following situations: 1) if the person has acted either under the “authority of another provision of this Act”; 2) by following the Duty of Care guidelines; 3) under an approved Cultural Heritage Management Plan (CHMP) which is mandatory for large scale projects that have an Environmental Impact Statement (EIS) or can be voluntary; 4) under a native title or other agreement with an Aboriginal party (such as an ILUA); 5) “if the person owns the Aboriginal cultural heritage, or is acting with the owner’s agreement”; or 6) in emergency situations (Queensland Government ACHA 2003: 21). The legislation
remains in effect across all land tenure types (e.g. freehold, pastoral, mining leases),
establishing that all land users must exercise a Duty of Care to protect Aboriginal
cultural heritage from harm, with nowhere in the state exempt from the principles of the
Duty of Care. This blanket protection is extended to both tangible and intangible values
of a location, both to visible sites, cultural landscapes and objects, as well as more
intangible places and objects of significance, which may not exhibit any physical
markings but are deemed as significant to Aboriginal people because of “Aboriginal
Tradition; the history, including the contemporary history, of any Aboriginal Party for
the area” (Queensland Government DATSIP 2014: 1). Examples of intangible cultural
heritage sites may include story places, Dreaming sites, birthing sites and other
locations, (e.g. springs, swamps) which may not have visible cultural markings, but hold
cultural significance for the Aboriginal people of a designated area.

While the protection of Aboriginal cultural heritage is provided for under the Aboriginal
Cultural Heritage Act 2003, the actual agreements between developers, miners and land
users and the relevant Aboriginal parties are largely determined by the proponents
themselves with limited government interference and oversight. The only instance when
cultural heritage agreements are mandatory is when a Cultural Heritage Management
Plan (CHMP) is triggered by certain high level activities. CHMPs may also be produced
on a voluntary basis where cultural heritage is likely to be harmed. CHMPs outline how
a particular Aboriginal site will be protected from high risk land use activities and
describe how significant places will be avoided, removed, or monitored as agreed by
both parties. CHMPs follow a strict process of notification and consultation, with
Cultural Heritage Bodies (where they exist) playing a role in identifying the relevant
Aboriginal parties for an area, using the hierarchy of cascading relevance based on the
Native Title process (see section 9.8). In the absence of Native Title claims or registered
Cultural Heritage Bodies, land users consult with the Aboriginal Party. The Aboriginal
Party is defined as a person who has particular knowledge about traditions, observances
and beliefs associated with the area, and who has responsibility, or is a member of a
family who has responsibility for the area under Aboriginal tradition. The relevant
Aboriginal parties are required to respond within a certain timeframe in order to become
“endorsed,” and failure to become endorsed will result in the parties being excluded
from the negotiating process (Queensland Government ACHA 2003). The CHMP then
can be negotiated between the developer and the endorsed parties, and the agreement may include a range of outcomes including not only heritage protection but also employment and training opportunities and access to country for traditional activities (State of NSW Office of Environment and Heritage 2013). All disputed CHMPs can be sent to the Land Court for arbitration, often a lengthy and expensive process.

CHMPs, however, are only triggered when there is a large scale project, and it is a reactive piece of legislation, rather than a proactive. Small scale projects do not require Cultural Heritage Management Plans and the Aboriginal parties for an area cannot require one be created, the impetus must come from the development proponent. All smaller scale impacts must comply with the Duty of Care guidelines, but often the Duty of Care can be satisfied with limited steps.

The development proponent can comply with the Duty of Care Guidelines in a range of ways, and it is largely a self-assessment process, with few governmental checks and reporting. When determining whether the Duty of Care was satisfied in the event of a dispute, the court looks at the nature of activity; the type of Aboriginal cultural heritage that was harmed; the amount of consultation with Aboriginal parties; whether any surveys or research was undertaken in an area; whether there was a search performed of the Aboriginal Cultural Heritage Database and Register; the amount of compliance with the Duty of Care guidelines; and the nature of previous land use in the area (Queensland Government ACHA 2003: 21). A proponent of any activity not large enough to require a Cultural Heritage Management plan has various options to be seen to have satisfied the Duty of Care guidelines. These compliance options can range from comprehensive protective measures, such as developing voluntary Cultural Heritage Management plans after consulting with all the relevant Aboriginal parties, all the way down to the basic level of a simple verbal, unwritten agreement with an Aboriginal party, who may be a single Aboriginal individual under provision 3(a)iii - “another agreement with an Aboriginal party” (Queensland Government ACHA 2003: 21). Developers may also opt to do a Cultural Heritage Survey, though this option is rarely chosen, with only three Cultural Heritage surveys having been registered in Queensland by 2010 (State of NSW Office of Environment and Heritage 2013). The Duty of Care Guidelines, in practice, can be porous and satisfied with very limited harm minimisation actions.
9.8 The 2010 ACHA Amendments

The Aboriginal Cultural Heritage Act was amended in March 2010 to clarify some sections and to set out a strict hierarchy by which Aboriginal people need to be consulted when their cultural heritage may be impacted. The changes to the legislation were implemented to streamline the consultation process for developers and land users, especially in areas that have multiple Aboriginal groups or that have been subjected to multiple Native Title claims. This strict hierarchy has critical ramifications because it governs which Aboriginal groups are seen to have legislative right to be consulted and the authority to make decisions regarding the cultural heritage of an area. The 2010 ACHA Amendments codify which people have the power to ‘speak’ for country. While the legislative changes may have streamlined the process for developers, especially in locations that have multiple, unsuccessful Native Title claims, the new Amendments have the potential to disenfranchise certain groups, excluding them from the decision making process for an area.

The 2010 Amendments set out a strict hierarchy designating the order in which Aboriginal people should be consulted when the cultural heritage of a location may be impacted. This consultation structure has four-tiers, with, as in all Queensland legislation, the Determined Native Title Holders of an area holding the greatest power and authority. The current hierarchy of consultation begins with these Determined Native Title holders and cascades down the ranking in the following summarised order:

1) The Determined Native Title parties;
2) In the absence of any successful Determined Native Title claims, then the claimants named on the most recent registered Native Title claim;
3) If there are no current registered claims, the applicants on the most recent previous registered claim, regardless of determination (including failed claims and claims that were struck out);
4) In the instances where there are no Native Title claims, successful or otherwise, then the Aboriginal ‘parties’ for the area – Aboriginal people who have traditional and cultural links to a particular region.

The ACHA 2003 2010 amendments brought in the ‘last man standing’ rule to be enforced in areas where there may be multiple Native Title claims, meaning that the
previous registered applicants on claims (tier three), failed or otherwise, maintain authority to make decisions for an area, although they have no legally recognised right.

While the amendments sought to streamline the consultation process, making it easier for land holders or other parties to determine whom to contact and consult in terms of decision making concerning cultural heritage or negotiating rights with mining companies, for example, the amendments also disempower people who may have legitimate concerns about their cultural heritage. Under the current hierarchy system implemented in 2010, while the provisions for groups with Determined Native Title or current registered claims largely are unchanged, the most profound impact is on Aboriginal communities who have had previous failed claims. Prior to the 2010 amendments, the consultation hierarchy described above remained the same for the first two tiers (Determined Native Title holders and recently registered claims), but in the event of no recently registered claims (tier three), a person was deemed to be a Native Title party, if the person had been a registered claimant and “the person’s claim has failed, but there is no other registered native title claimant for the area” (ACHA 2003 s.34(b)i Reprint no.1B 2009). All failed registered claimants were to be consulted, regardless of whether they were named on the most recent claim. All previously registered claimants were deemed equal under the legislation, with no one group favoured over another.

Understandably, in some instances, this broad consultation requirement meant that the development proponent was obligated to contact a potentially large number of individuals and groups of Aboriginal stakeholders. One of the goals of the 2010 Amendments was to “align cultural heritage agreements with the Native Title process” (Queensland Government 2011: 2). The 2010 Amendments sought to clarify this procedure, formalising a strict hierarchy, especially in areas with no Determined Native Title claims. The potentially lengthy, complex consultation process was seen as detrimental to development, and, therefore, the consultation process, while similar to the ACHA 2003 hierarchy described above, had one crucial change. While the hierarchy remained intact for preference to be given to Determined Native Title holders, then to all currently Registered Claims applicants, the next tier was altered to designate the Aboriginal native party for the area as only the applicants named on the most recent failed Native Title registration, ‘the last man standing.’ As the Indigenous Cultural
Heritage Acts Amendment Bill exposure draft explanatory notes state, “in situations where there are no registered native title claimants for the area, a party will be recognised as the native title party for an area if theirs was the last claim to be removed from the register” (Queensland Government 2011: 7).

As stated in the Native Title section, the Native Title process is often lengthy, taking 10 or so years in some cases, often divisive within communities, with individual families and clan groups being placed in adversarial positions. While there are a range of reasons why Native Title claims are unsuccessful, and it is beyond the scope of this thesis to examine the causes of claims being struck out and the lingering after effects on communities, it is important to note that some claims fail because of internal divisions within a community. These internal divisions are sometimes the result of certain community members excluding others or disunity and lack of cohesion between families and individuals. These disputes can spill into the Native Title process, and claims can be unsuccessful because they do not meet the necessary conditions, e.g. the named applicants are not deemed to be an accurate representation of the group. The current ACHA, however, does not reflect the complexity of these failed Native Title claims. By placing emphasis on only the named applicants of the last registered claim, the ACHA favours the position of those individuals who are named applicants, regardless of the reason that the claim was unsuccessful. In cases where claims were struck out due to the objection of other Traditional Owners, who may have not been registered applicants for a variety of reasons, the legislation does not recognise the legitimacy of the objectors, only the legitimacy of the failed applicants. Schnierer et al. (2011: 33) detail the case of a failed Native Title claim near Brisbane in 1999 that had 7 named applicants, although there were actually 20-30 families with legitimate Native Title rights. The claim was struck out on that basis, but the named applicants remained the only ones recognised as having the right to speak for country, leaving the majority of the group excluded. The ‘last man standing’ rule intertwines the Aboriginal party with the Native Title process, yet there is no requirement to investigate the reasons why the claim failed or whether the named applicants are in reality the people who should be consulted. In the pursuit of a streamlined process, the Amendments disregard the complexity of the situation for many communities, favouring certain groups over others, legally recognising certain individuals, even though their claims were not legitimised,
while others are disenfranchised, regardless of the worth of their interest and connection to country. The ‘last man standing’ rule, while beneficial to developers and miners, can have a negative impact on communities, creating further angst among Aboriginal parties who may feel that they are being left out of the process, regardless of the value of their connection and Traditional knowledge (Australian Archaeological Association 2009, 2012; Cole and Buhrich 2012; Edelman et al. 2010; Wishart 2011).

At present, approximately 30% of Queensland is covered by Determined or registered Native Title claims (see Figure 9.3), meaning that the majority of the state has a potentially complicated situation in regard to Aboriginal parties and who should have the codified right to make decisions for their Traditional estates. The ACHA in its current form, however, does not acknowledge the complexity of these community situations. By using the Native Title Act to grant authority to particular community members, the potential disputes and issues from the Native Title process can bleed into cultural heritage management, creating further challenges for communities without Native Title to protect their cultural sites.

9.9 Codes of Environmental Compliance for Exploration and Mineral Development Projects

The only other piece of legislation which has built-in protection rights for Aboriginal cultural heritage are the Codes of Environmental Compliance for Exploration and Mineral Development Projects. The Codes of Environmental Compliance are self-assessable conditions for standard mining leases and exploration permits, with Condition 14 establishing that “the holder of the environmental authority must not carry out activities within 100 metres of a Historical, Archaeological or Ethnographic site” (Department of Environment and Heritage Protection (DEHP) 2013). The Codes make no assessment of significance. They only require that any location which contains objects or physical evidence of the past requires a 100m buffer from any exploration or development impacts on a standard Environmental Authority. While Condition 14 can be invoked to place 100 metre buffer zones around archaeological sites, it remains the applicant’s responsibility to assess and identify these sites, and on non-standard leases, variations to this condition can be applied for and obtained (Department of Environment
and Heritage Protection 2013). The issues with the effectiveness of this self-assessment process are discussed in the next section.

9.10 Compliance and enforcement

Under the Queensland ACHA legislation and the Duty of Care, destruction or harm of Aboriginal sites can result in a fine. Maximum penalties for a breach to the Duty of Care are $1,780,000 for corporations and $117,800 for individuals (at October 2015). Stop work orders can also be issued under the Mines Act, to prevent further work by companies that threaten cultural heritage sites. While these statutes are in place, with stiff penalties for breaches, they are rarely invoked, leaving the legislation without adequate policing and enforcement powers.

The following incident occurred during the course of this PhD project, and it is related here as an example of the type of obstacles and lack of support faced by Aboriginal communities who wish actively to protect their cultural heritage sites and the failings of the current ACHA enforcement regime. During routine fieldwork and site inspections with Wakaman Traditional Owners, the survey team discovered damage to a rock art site in the Chillagoe area. The team reported to the Department of Aboriginal and Torres Strait Islander Partnerships (then DATSIMA) in August 2013. This damage appeared to be the result of drilling and chiselling the limestone tower, possibly as a precursor to mining activity. The section of limestone tower affected falls under a mining lease, but it is known to have rock art in the area, and all previous mining activity had been undertaken outside a 100 metre buffer zone, as specified by the Codes of Environmental Compliance (see section 9.9). This new, recent activity was known to have occurred between specified dates, as there had been multiple visits to the site in 2013 to complete surveying the towers in that area, and there had been on-going monitoring of the site, so the approximate timing of the damage could be determined. An assessment report was prepared detailing the damage, the time frame when it occurred, as well as all the pertinent information (including GPS locations and photographs) (Taçon et al. 2013). This report was produced with the support and input of the Wakaman Traditional Owners and submitted to the relevant Director of DATSIP. Beyond initial contact from the Department to say that they had received the report, no further information or contact was forthcoming from DATSIP. There was no follow-up
with the report’s authors or the Traditional Owners, and no outcomes were ever communicated to the interested parties. It is unknown whether the owners of the Mining Lease were ever contacted or whether any investigations or site inspections ever occurred. If there was an investigation, it did not involve the Traditional Owners and no findings were ever given to the community.

While this case is just an individual example, it highlights the inadequate support communities are provided with when they seek to protect their heritage. Even in this instance, when a report was prepared by professional archaeologists in conjunction with the Traditional Owners, when the timing and nature of the damage was known and documented, when all the pertinent information was provided to the DATSIP, there was no outcome, no follow-up, no known investigation and no communication from the Department. It is unclear whether there was any enforcement of the Act or whether the incident was even examined since no information was ever fed back to the Wakaman community.

This example highlights another of the obstacles faced by Aboriginal communities to preserve their cultural heritage. Aboriginal communities are expected to monitor their sites, maintain a presence on country, often over large geographic areas, in order to keep an eye out for an illegal activity. When threats and harm are detected, then they must furnish documentation, preferably in report form, to DATSIP. Throughout this process, they are given no support or resources. While the burden of policing the Aboriginal Cultural Heritage Act largely falls on the Aboriginal Community, they receive no compensation or even a basic response. Furthermore, monitoring and maintaining cultural heritage sites is beyond the capacity of many Aboriginal communities. But even when the community is able to detect and report potential threats, as was the case in this instance, there was no assistance provided by DATSIP, no follow-up, and no communication.

The above example is not isolated. Schnierer (2010: 57) noted that Traditional Owners’ views on compliance issues were “mixed.” While there have been successful prosecutions for breaches of the Duty of Care, such as in 2011 when a quarrying company in southern Queensland was fined $80,000 for disturbing 30 artefacts of Aboriginal significance when clearing an access track on their lease, there remains a
perception by Traditional Owners that much destruction is still occurring unchecked, especially on freehold land where there is no access (Rowland et al. 2014; Schnierer 2010; Wishart 2011). The Duty of Care is largely a self-assessment process. There are no reporting requirements when cultural sites are found by the public and land users and little independent monitoring on small scale development activities. Since many cultural heritage sites remain undocumented, destruction may happen without anyone’s knowledge. One of the underlying assumptions of the ACHA is that the majority of the cultural heritage sites in Queensland are ‘known,’ that they have been previously recorded (and possibly entered into the Cultural Heritage Database and Register, see 9.11) or if a site is found by a developer and land user, that the site will subsequently be reported and measures will be taken to minimise harm. The reality, however, is that much of Queensland has never been covered by archaeological survey, and Traditional Owners have had restricted access to many parts of their Traditional territories due to land tenure types and displacement issues. Even if development proponents or landowners on freehold property legitimately seek to protect cultural heritage, it is unclear whether they have the skills and expertise to recognise cultural heritage sites, especially in locations significant for their intangible heritage values. Because there is little independent oversight and monitoring, much of Queensland’s culture heritage is vulnerable to destruction, either by inadvertent or deliberate means.

Another flaw in the enforcement system is that any penalties paid for breaches of the ACHA are paid to the Queensland Government, with no compensation going to the communities whose cultural heritage has been destroyed (Schnierer 2010; Wishart 2011). There have been calls to institute civil right actions for Traditional Owners to seek damages in addition to these criminal penalties (Wishart 2011). Perhaps any proceeds garnered from successful prosecutions could be funnelled back into the community affected or earmarked as a fund to support training and monitoring for cultural heritage work in Aboriginal communities across Queensland.

9.10.1 Access issues

The effective monitoring, surveying, maintenance and protection of cultural heritage sites is wholly dependent on land access rights. If Aboriginal groups or other heritage managers seek to actively engage in cultural heritage research and protection, they must have the ability to access sites on an on-going basis, to visit sites regularly to assess the
impacts of environmental and social pressure. In Queensland, even for groups that have Native Title rights over their traditional territories, access to land is severely curtailed, meaning that although sites have blanket protection under the ACHA 2003 Duty of Care, often it is very difficult to gain right of entry in order to effectively police and enforce the Act. Groups that have Native Title may be granted access to certain land types to undertake cultural and traditional activities; however, freehold land and perpetual pastoral leases are exempt under the Native Title Act, meaning that Native Title Aboriginal groups need to negotiate access arrangements with individual landholders and pastoralists, many of whom are resistant to allowing Aboriginal people on their land for a variety of reasons. For groups without Native Title, the task of gaining access is even more challenging, as they have no additional rights beyond an ordinary citizen, even though they have been tasked by the Government to assess and protect their cultural heritage. This curtailed right of access results in many cultural heritage sites never being documented or being locked away.

An example of this lock-out is a group of Quinkan style rock art sites in southern Cape York located on a perpetual pastoral lease southwest of Cooktown. The leaseholders had not allowed access to members of the public, including local Traditional Owners and researchers, for a number of years, so the extent and nature of potential sites across the property was unknown, although Traditional Owners had stories of cultural activities that had taken place there in previous generations. Access to the property was first granted in 2014, when the pastoral lease was sold, with the new owners opening the area to research and visits by Traditional Owners. An initial archaeological survey in April 2014 documented four Quinkan style rock art sites which had not been previously recorded (Winn and Buhrich 2014). Many such areas in Queensland remain behind locked gates, with no oversight, monitoring or knowledge of the cultural heritage sites.

9.10.2 Issues with government and community liaison

The problematic liaison, dialogue and support between DATSIP and other governmental departments and communities, as described in the above example of damage reporting at Chillagoe, leaves Aboriginal communities to shoulder the burden of cultural heritage protection, often with inadequate backing and aid. Land Councils across Queensland have been established to handle matters of Native Title, with Cultural Heritage Bodies acting as a liaisons between developers, miners and
pastoralists and the Aboriginal communities falling under their umbrella. For the northern region of Queensland, two Land Councils oversee the region, with the Cape York Land Council, covering Cape York, and the Northern Land Council, encompassing communities west and south of Cairns. While a discussion of the strengths and weaknesses of individual Land Councils is beyond the scope of this thesis, it should be noted that dissatisfaction with the services delivered by Land Councils is often high. At a recent gathering of Traditional Owners from across Cape York at the Cape York Forum of the December 2014 Australian Archaeology Conference held in Cairns, Traditional Owners expressed dismay that the Cape York Land Council did not furnish relevant Future Act notices to communities within the specified timeframes, and the Traditional Owners felt they had no recourse when the Land Council was negligent. An example of this high level of dissatisfaction occurred in August 2015, when the Aurukun Native Title Body, Ngan Aak-Kunch (NAK), which represents the Wik and Wik Way people, dismissed the Cape York Land Council from representing NAK interests in land issues and mining negotiations, because NAK was concerned that the CYLC was not adequately consulting with the Traditional Owners and going against the decisions of the community in relation to the Aurukun Bauxite project (Power 2015; Robinson 2015).

For Aboriginal parties who are in remote areas and who may not be registered Native Title claimants or represented by a Cultural Heritage Body, the process of notification about proposed mineral or other types of development is especially difficult, since currently notifications are issued in newspapers, which may not be readily available or easily accessible in remote communities. Under the ACHA 2003, for example, development proponents wanting to create Cultural Heritage Management Plans and who wish to inform relevant Aboriginal parties who are not Native Title parties or covered by a registered Cultural Heritage Body must place a public notice in a newspaper detailing the project specifics and setting a deadline of 30 days for an Aboriginal party to respond in order to become an endorsed party of the process (ACHA 2003 s96). Many remote people may have limited access to these newspaper notifications, especially across Cape York, therefore miss out on being an engaged part of their cultural heritage management (Cole and Buhrich 2012).
9.11 The Indigenous Cultural Heritage Database and Register

One of the underlying foundations of the ACHA 2003 is that sites and cultural heritage information in Queensland are registered on a centralised repository, the Indigenous Cultural Heritage Database and Register, maintained by the Queensland Government. The database was designed to be a comprehensive record of all known sites in Queensland, so that land users could search the database in order to see whether an activity might potentially impact Aboriginal cultural heritage. The Duty of Care compliance regulations require development proponents to search the register as a step in the harm minimisation process. While a search of the database alone does not satisfy the Duty of Care Guidelines, it is one of the essential tools that DATSIP and proponents utilise to gather information to determine the number of sites and locations within a designated area. The database has two primary functions: 1) as “a depository of information for consideration for land-use planning (including local government planning schemes and regional planning strategies)”; and 2) as “a research and planning tool to help people in their consideration of the Aboriginal and Torres Strait Islander cultural heritage values of particular objects and areas” (Queensland Government Department of Aboriginal and Torres Strait Islander Partnerships 2015a). At present, 40,000 cultural heritages sites and places are listed on the register and over 14,000 database searches are conducted annually (James Gaston, Senior Cultural heritage Officer North Region, DATSIP, pers. comm. 2015).

Consultation with the database and the register, however, can be problematic. There is often debate within Aboriginal communities about whether they wish their sites to be registered on the Queensland controlled database, or whether they wish that information to be held solely by the communities themselves (O’Faircheallaigh 2008; Schnierer 2010; Carol Chong 2015 pers. comm.). Many communities choose not to register their sites because of issues of sensitivity or perceived potential loss of control of the information. DATSIP does place restrictions on access, only releasing information to land users and developers, Aboriginal community members, or researchers with permission from the relevant communities, but some Aboriginal communities are not comfortable with the process (Carol Chong pers. comm. 2015). Control of the dissemination of information is crucial to Aboriginal people, integral to their culture and society. The right to information is earned in traditional Aboriginal society, often
through the process of initiation, and access to knowledge can be heavily restricted along gender and generational lines. Much traditional cultural knowledge concerning sites and significant landscape areas must remain secret or restricted, available only to select appropriate members of the community who are deemed qualified to receive it, and then the transmission of that information is strictly culturally controlled. The Indigenous Cultural Heritage Database and Register, however, operates in fundamental opposition to this traditional protocol. The Database serves as a central depository, even with the layers of information protection put in place, governed by a governmental department outside of the community who makes decisions regarding access and dissemination. Aboriginal communities are then faced with a dilemma about what information to release in order to potentially protect their sites from harm, while still respecting their traditional cultural need to control and restrict information (Rose 2001; O’Faircheallaigh 2008).

The Cultural Heritage Database and Register also operates with the assumption that all Aboriginal people in a particular area wish to have their information stored centrally under Queensland government control; however, as stated earlier, the relationships within communities are often complex and may be poorly understood by people from outside. In situations where there are multiple Aboriginal parties for an area, especially in regions with no Native Title or disputed Native Title claims, there may be distrust and division within the community, with some sections of the community wishing to protect their traditional knowledge and maintain control within their own hands, not relying on the Queensland Cultural Heritage Unit or the Minister to make decisions for them.

Even when information is entered, the records are not always complete. The legislation does not require sacred/secret information to be included, and there are no compulsory reporting requirements for new sites except under Cultural Heritage Management Plans and Cultural Heritage Studies. The additional information garnered from research or chance finds is not mandatory, so it is unclear how many sites are not represented, and there is no audit review or enforcement of the process. In terms of this PhD project, the Wakaman people have chosen not to enter sites into the register, instead preferring to develop and maintain their own community controlled database, separate from the Queensland government.
This maintenance of control is also chosen by other communities in Queensland and elsewhere (Schneirer 2010; O’Faircheallaigh 2008). At the Cape York Forum of the Australian Archaeological Association conference in December 2014, the difference of approach for the reporting of sites for inclusion in the database was highlighted. Stephen Nichols, the Head of the Cultural Heritage Unit, DATSIP urged Traditional Owners to register their sites on the Cultural Heritage Database because, in his view, the more “dots” representing sites that were located on the map, the more likely Traditional Owners would be contacted when development was proposed (Stephen Nichols pers. comm. 2014). Traditional Owners from a range of communities across Cape York, however, expressed the opposing view, that their cultural sites could not be separated from the wider environment, that every part of their traditional territory was significant, and how was it possible to record individual sites when each part of the land represented a possible birth or death place, a location where their ancestors walked or hunted, where traditional activities took place. It was impossible to dilute those significant areas down to discrete locations, points on a map, when all their traditional territory area was significant. The Traditional Owners were opposed to the concept of having to choose only a sample of these significant areas to report, so that developers could then come and negotiate with the communities concerning which locations on the list they would allow to be impacted by mining and development. While these examples may be individual viewpoints, they illustrate that all Aboriginal communities do not necessarily see the Cultural Heritage Database as a useful tool for storing their cultural heritage knowledge. DATSIP and developers, however, use the database to inform their decisions about development, planning and enforcement. The Cultural Heritage Database and Register is a fundamental part of the current cultural heritage protection regime, from the Government’s perspective, but Aboriginal communities in Queensland do not universally share that position.

9.12 Western Australia, the Northern Territory and Global Contexts

While the focus of this thesis is primarily on Queensland, similar issues concerning the complexities in legislation regimes and increasing pressure on cultural heritage sites are present across northern Australia and elsewhere around the world.
9.12.1 Western Australia

Similar to Queensland, Western Australia has a variety of land tenures and pieces of heritage legislation, with the primary Western Australian legislation being the Aboriginal Heritage Act (AHA) 1972. The AHA differs from the Queensland ACHA in that Traditional Owner involvement is more limited and in that government officials, rather than Aboriginal people, hold the determining authority over cultural heritage sites. The AHA is managed by the Western Australia Department of Aboriginal Affairs (DAA), and key heritage decisions are made by the Minister, who is advised by the Aboriginal Cultural Materials Committee (ACMC). The ACMC comprises both Aboriginal and non-Indigenous members, with at least one of the eight committee members having recognized anthropological expertise (State of NSW Office of Environment and Heritage 2013). Consultation with Aboriginal communities is not required by the AHA, but alternative pieces of Western Australian legislation, such as the Environmental Protection Act 1986, do specify the need for consultation (State of NSW Office of Environment and Heritage 2013).

In 2014, the Aboriginal Heritage Amendment Bill, which is currently under review, was introduced to streamline heritage management decisions in Western Australia. Several components of the proposed legislation, however, have raised concerns with heritage professionals and Indigenous groups. The 2014 amendments to the AHA further reduce of the role of trained heritage professionals and Traditional Owners in the assessment process and increase the potential for politicised heritage decisions (AAA 2014; Vaughn 2016). Under the 2014 amendments, the evaluation role of the ACMC is decreased, and the requirement of a heritage professional to sit on the committee is removed (AAA 2014). The DAA, under the new amendments, will largely be responsible for determining significance, with the CEO of the DAA effectively replacing the ACMC (AAA 2014). There is concern that with the proposed concentration of heritage decision making power, the DAA will be under-resourced to effectively manage cultural heritage sites which in Western Australia, similar to Queensland, remain largely unknown and unmapped (AAA 2014). Even under the existing AHA legislation, the recent trend in Western Australia has been away from cultural heritage protection, with the proportion of sites being recognised and protected under the AHA declining from 80% to 23%
between 2011-2013, due to a lack of clear guidelines for assessing site significance and the changing definition of what constitutes ‘a site’ (AAA 2014: 4; Vaughn 2016).

9.12.2 The Northern Territory

In the Northern Territory (NT), different cultural heritage legislation is in effect, but similar pressures of mining and development exist. The Northern Territory differs from Queensland and Western Australia in that over 50% of the NT is comprised of Aboriginal freehold land. In the NT, three pieces of legislation govern cultural heritage protection: the Northern Territory Aboriginal Scared Sites Act 1989 (NTASSA); the Commonwealth’s Aboriginal Land Rights Act (Northern Territory) Act 1976 (ALRA[NT]); and the Heritage Act 2011. The ARLA(NT) and NTASSA both protect ‘sacred sites,’ which are broadly defined as being sacred or significant to Aboriginal people and Aboriginal traditions. The ARLA(NT) covers sites located on unalienated Crown land and is administered by four Land Councils. The NTASSA, on the other hand, pertains to sites not located on Aboriginal land. The NTASSA provides for the Aboriginal Areas Protection Authority (AAPA) which advises the Minister, oversees agreements between Traditional Owners and other parties and maintains a register of sacred sites. Under the NTASSA, Authority Certificates must be obtained to conduct work on sacred sites. Authority Certificates are granted only after the AAPA consults with the relevant Aboriginal people. In addition to the ARLA(NT) and the NTASSA, the Heritage Act 2011 establishes the Heritage Council which oversees a register of heritage places encompassing Aboriginal and Macassan archaeological places as well as nominated European heritage locations.

Despite the NT legislation having significant Aboriginal consultation and multiple safeguards, damage to cultural heritage sites still occurs. A recent example is the partial destruction of the sacred site, ‘the Two Women Sitting Down’, in 2011 by the mining company OM Manganese. Even though the mining project was conducted under both an AAPA Authority Certificate and an Indigenous Land Use Agreement (ILUA), the sacred site’s outcrop partially collapsed due to mining practices. In 2013, OM Manganese was fined AUD $120,000 for desecration of a sacred site and AUD $30,000 for contravening an Authority Certificate, a landmark ruling which represented the first successful prosecution of a charge of desecration under existing Australian legislation (Lewis and Scambary 2016).
9.12.3 Global

Northern Australia is not alone in having cultural heritage management challenges. While it is beyond the scope of this thesis to discuss comprehensively other jurisdictions, it should be noted that similar issues exist in other developed and developing countries. Canada, for example, has a similar legislative structure to Australia in that each Province has its own individual legislation, and there is no national approach to cultural heritage protection. Navigating the complexities of multiple levels of legislation and the need for increased funding resources and capacity building in First Nations communities has been highlighted as a challenge to effective cultural heritage protection (see Bell and Paterson 2009; Bell et al. 2014). In the USA as well, many sites are vulnerable to mining and vandalism, and Indigenous groups are often seeking greater safeguards. For example, in 2016, five Native American tribal nations, together with over 700 archaeologists, called for the protection of the Bears Ears cultural landscape in Utah, a 1.9 million acre area, encapsulating over 100,000 archaeological sites, which is currently unprotected by heritage legalisation (Bears Ears Inter-Tribal Coalition 2016). In developing countries, many of these same issues are compounded by limited resources and diminished recognition of Indigenous groups.

9.13 Funding and support

In Queensland, while the ACHA 2003 gives responsibility to Aboriginal groups, for example, to assess significance and negotiate harm minimisation for their cultural heritage, there is no formalised method or support for Aboriginal groups to undertake this heritage work. Aboriginal Groups usually depend on developers to fund any heritage surveys and legal advisors that may be required for proposed projects. While many proponents do furnish assistance in this regard voluntarily, there is no legal requirement that developers must provide this support (O’Fairchealliaigh 2007, 2008; Schnierer 2010; State Office of Environment and Heritage NSW 2013). This reliance on external funding, with no legislative backing, sets up a fundamental inequality in any negotiation of cultural heritage agreements between a developer and Aboriginal groups, because developers hold greater bargaining power and may threaten to withdraw or curtail funding at any point during the negotiations (O’Fairchealliaigh 2007). Because there is a lack of independent sources of funding, and many Aboriginal communities are
unable to self-fund assessments, heritage work in Queensland is largely reactive. The majority of cultural heritage surveys in the state only occur when a project is proposed, and the clearances are then carried out within the parameters and boundaries of the proposed development. Cultural heritage management in Queensland is largely dependent on the needs and timetable of development, and Aboriginal groups who seek to work outside this framework, who proactively wish to survey, document, protect, and monitor their cultural sites face hurdles and challenges.

9.13.1 Funding options: Commonwealth and Queensland Government

Aboriginal communities in Queensland have a variety of circumstances, ranging from highly organised Native Title groups with strong corporations which can lobby for support, to smaller, less-organised communities without corporations who may only be a collection of scattered individuals. For sites and areas that lie outside of National Park boundaries, the Queensland and Commonwealth Government currently provide only limited capital for infrastructure or management of cultural heritage sites. Aboriginal groups interested in obtaining funding for research and protection for their cultural heritage sites have few options, and the options which are available, in the past few years have gone to groups that have Native Title or corporations.

The Commonwealth funding program, for example, the Indigenous Heritage Programme grants (now the Indigenous Advancement Strategy), was offered on a limited basis in 2014, with invitations extended only to 15 previous successful applicants and funded programs, with no new projects being approved (Australian Government Department of Environment, 2015). In late 2015, funds were offered in the ‘cultural and capability’ program stream (one of five target areas), with large grants (over $500,000) only available to incorporated groups (Department of the Prime Minister and Cabinet, 2015). The Commonwealth Government, however, does recognise the need for new funding options, calling for increased partnerships with philanthropists, a proposed national lottery and crowd-funding schemes (Commonwealth of Australia, 2015a).

On a Queensland state level, cultural heritage grants and support for Aboriginal communities to protect and maintain their cultural heritage have been significantly scaled back since 2012. In 2016, there are few avenues for accessing Queensland
Government funds, and the few funding streams that do exist favour larger, organised Aboriginal groups. Between 2012 and 2015, the number of both Queensland and Commonwealth grants for protecting Aboriginal and Torres Strait Islander cultural heritage declined significantly. Prior to 2013, small cultural heritage grants were available to a range of Queensland residents, both Indigenous and non-Indigenous, for the preservation of cultural heritage. These small general grants were gradually phased out, and the funding options and groups entitled to apply were whittled down with the restrictions on funding tightened. By 2015, only two Queensland funding streams were available to Traditional Owner groups, either in the form of the Indigenous Sea Country Management Grants Program, which provides funding to Indigenous groups for developing and maintaining sustainable practices for the management of turtle, dugong and other marine resources and a “range of land and sea management activities,” or the more general Queensland Indigenous Land and Sea Grant program, which encompasses the conservation and protection of both “environmental and cultural resources” (Queensland Government 2015). The successful applicants for 2013/2014 round of the North Queensland Land and Sea Grant program consisted only of Indigenous groups who already had Native Title, or who were of sufficient size and organisation level to be incorporated. No small scale projects were supported. In 2015, the North Queensland Indigenous Land and Sea Grant was rolled into the Queensland Indigenous Land and Sea Grant program (thus increasing the competition for the more general fund). The most recent round of successful applicants for 2014/2015 continued the trend of granting funds only to Native Title holders or large incorporated groups with an emphasis on environmental management (Queensland Government 2015). Out of the eleven successful grant applicants, six projects in 2015 had funds expressly earmarked for cultural heritage conservation and management and training, with the remaining projects focused mainly on natural resources (Queensland Government 2015). Successful projects obtained funding between $25,000 and $50,000, and the total of the six projects which had cultural heritage components totalled $285,000 (Queensland Government 2015). In essence, in 2015, this $285,000 of funding, given to six Aboriginal groups, was the only Government support available to Queensland Aboriginal communities for cultural heritage management in a state of 1.8 million km². While the projects themselves are worthy and are no doubt beneficial to the recipients, the vast majority of cultural heritage sites in Queensland receive no funding support.

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The only other type of Queensland funding available for funding for heritage preservation of any type (as of October 2015) is under the “Everybody’s Environment” grants program. These grants, however, only apply to built heritage, (e.g. historic buildings, railway stations and museums). No Indigenous cultural heritage sites are covered.

While the details of individual funding projects are not critical, what is significant is the general erosion of funding support options for Aboriginal and Torres Strait Islander groups (and interested members of the public) to preserve cultural heritage. There has been a consistent narrowing of funding alternatives; an increasing emphasis on funding for projects focusing on natural resources, such as marine resources, (over cultural heritage sites); and a preference for supporting fewer, but larger scale, projects conducted by sizable Aboriginal Corporations or Native Title holders. This reduction trend results in the limited funding being channelled into targeted areas of the state, with the majority of small groups and projects receiving little or no support.

Essentially, under the present funding arrangements, groups who are successful in obtaining grants must be incorporated or hold Native Title and maintain sizeable group infrastructure. The grants available necessitate large scale projects that justify significant spending and operational costs. Small cultural heritage protection projects run by less structurally organised Aboriginal groups and/or interested members of the general population are not supported. This narrow focusing of funding means that the majority of Aboriginal communities and cultural heritage sites across Queensland get no support and assistance, leaving vast stretches of Queensland with little or no cultural heritage management strategy and limited capacity for communities to take an active role in cultural heritage protection.

Active cultural heritage management requires funds, training, access to expert technical advice and time. Many Aboriginal communities do not have the resources to tackle cultural heritage issues, when they are faced with more pressing social and economic concerns. Yet under Queensland legislation, Aboriginal groups are the designated drivers of cultural heritage matters, with the burden of cultural heritage management and preservation falling to community control, but without the necessary support from local and State government. Communities are often isolated, left to police matters on the
ground, with no resources. The lack of adequate funding support and assistance for these groups results in cultural heritage matters becoming a lower priority or not being addressed at all. Even for groups who wish to undertake an active role in their cultural heritage monitoring and preservation, they confront multiple issues, such as the right of entry to land, a lack of training, and the challenge of sourcing technical and conservation advice and support from archaeologists and conservators, as discussed below (see section 9.14).

9.14 Research and technical advice

9.14.1 Access to academic research

Coupled with the lack of funding options, many Aboriginal groups have difficulty in accessing appropriate cultural heritage assessment technical advice from archaeologists and other professionals. At present in Queensland, there is no coordinated, systematic approach to archaeological research. Current academic archaeological research in Queensland is largely patchwork, with few regional, comprehensive studies being undertaken. Occasionally, certain Aboriginal groups benefit from the collaboration and partnership with universities to undertake research on their Traditional territories. These projects are often ad hoc though, driven by the aims of an individual researcher who may establish on-going working relationships with Aboriginal groups according to the particular researcher’s interests or the needs of the University. Often research projects are dependent on the good will and strong relationships that develop between particular researchers and certain Aboriginal communities. Under the Queensland ACHA legislation, having community permission and involvement is key to undertaking any form of archaeological research on country. The need for intense, on-going consultation between researchers and Aboriginal groups is one of the strengths of the Queensland legislation, allowing for trust and mutually beneficial projects to be established. Consultation, however, is a lengthy, involved process, one that takes the input of considerable time by all project members; it is not something that can or should be rushed. Because of the large time investment needed to develop these relationships, researchers often return to the same geographic area and do multiple projects because the community relationships are well established, while other locations in the State may not receive much research coverage. Also, the number of active projects is usually
dependent on the number of individual archaeologists or anthropologists who are available to work in a given region. In north Queensland, perhaps because it is relatively isolated, away from population centres and with only a small number of local universities, there are only a handful of archaeology projects occurring at any given point in time, even though there is a vast geographic area that has had little or no archaeological investigation.

In some parts of Australia, other research funding streams may benefit archaeological research through partnerships with mining companies, such as the UWA/Rio Tinto CRAR + M arrangement in Western Australia, or through donations and support from dedicated charitable organisations, such as the Kimberley Foundation. In Queensland, however, these alternative funding arrangements for research largely do not exist, meaning that many cultural heritage sites across the state may receive only limited research attention.

9.1.4.2 Access to consulting professionals

Aboriginal communities are often dependent on professionals from outside the community to undertake research and assessment work. At present, while there are many Indigenous individuals who participate in cultural heritage work as cultural advisors and community stakeholder representatives, and these community members hold vast amounts of traditional knowledge and expertise, there are relatively few Aboriginal people who hold professional archaeological degrees and are engaged in professional practice, despite the bulk of archaeological work in Australia relating to Indigenous cultural heritage (Fairburn et al. 2013; Ulm et al. 2013). The Australian Indigenous Archaeologists’ Association has approximately 20 members who are qualified archaeologists, reflecting the low participation rate of Indigenous people in the archaeological profession (Fairburn et al. 2013). The rate of participation of Indigenous people working in the archaeology field while holding professional qualifications (Honours degrees or above) has increased slightly over the past few years, from approximately 0.8% of archaeologists in 2010, to 2.8% in 2015, however, this participation rate is still small (Mate and Ulm 2015). While the complex reasons for the limited number of Indigenous people holding tertiary qualifications is beyond the scope of this project, the resulting reality is that Aboriginal communities are generally reliant either on Cultural Heritage Officers appointed from within the community, who may
not have had access to advanced training, or on external archaeologists and heritage professionals to assist in conducting surveys and cultural heritage management (or a combination of both).

The services of professionals from outside the Aboriginal community can cost significant money, with the current minimum hourly rate of consulting archaeologists being between $120-200 (Australian Association of Consulting Archaeologists (AACAI) 2015). Again, as stated earlier, proponents of development often fund these costs for cultural heritage clearance on proposed projects, but for Aboriginal communities who wish to be proactive in their cultural heritage management and to engage archaeological consultants (who are not university funded researchers) to assist in surveying, documenting and land mapping archaeological sites beyond the parameters of an existing development project, often the expenses required are prohibitive. Also, there may be a lack of professional archaeologists working in remote and regional areas. In the 2015 snap-shot survey of archaeologists conducted by Ulm et al. (in press), it was found that of the 345 archaeologists who responded to the survey, 72% of them were based in capital cities. Only 19% identified as being located in a regional centre, with 7% in a rural area and only 2% living and working remotely (Ulm et al. in press). These figures suggest that in more remote places, such as north Queensland, Aboriginal communities may have no ready access to a local archaeological professional, therefore, those archaeologists are likely to be brought in from outside (if at all) which is potentially prohibitive in terms of costing and relationship building. The majority of respondents to the archaeological professional survey also stated that they worked in the private archaeology sector (not for the government or for a university), suggesting that if external professionals are engaged, the majority of them are from the private sector (and have no funding of their own, i.e. no grants, therefore, they need to be paid either by a developer or by the Aboriginal community (Mate and Ulm 2015). The lack of resources available to Aboriginal communities, both in terms of funding and developing the capacity and training of community members for heritage work, is a hindrance for broad scale, long-term heritage planning and may leave sites vulnerable (State of NSW Office of Environment and Heritage 2013).
9.14.3 Access to advice and appropriate training

An interesting anecdotal trend which has appeared in north Queensland, which has not yet been researched adequately, is that because of these cost and access factors, as well as the Queensland legislation placing (rightly) the control of cultural heritage decisions in Aboriginal hands, Aboriginal communities and developers have begun to by-pass the use of professional archaeologists, preferring to do mining site clearance work, for example, by funding the Traditional Owners directly, with no need to involve (or pay) professional archaeologists. While it is an excellent result that money is flowing directly into Aboriginal communities who are engaged in protecting their cultural heritage, this trend highlights the need for capacity building within Aboriginal communities so that the community members are equipped with the appropriate skills to identify, monitor and maintain the cultural heritage sites on their country. Standardised, accredited cultural heritage training programs for Traditional Owners are rare in Queensland, meaning that Traditional Owners engaged in cultural heritage assessment work may not have the technical knowledge to conserve sites effectively.

More training and capacity building is not only needed for Aboriginal communities, but professional archaeologists can benefit as well. Even when the services of appropriate heritage professionals can be afforded by Aboriginal communities, often there is a lack of specialised training in archaeological conservation and monitoring practices. In Australia, most qualified archaeologists hold an Honours degree, with generalised training in the broad archaeological skills (e.g. excavation, surveying, documentation and assessment), and the bulk of archaeological work pertains to these generalised practices. Conservation techniques, however, require specialist training. For rock art sites for example, active intervention should only be a final resort, after careful consultation with Traditional Owners, under the advisement of experts (Agnew et al. 2015; Anati et al. 1984; Haskovec 1991; Lambert 1989, 2004). Currently few heritage professionals specialise in conservation techniques, and there are no guidelines for standardised practices in terms of monitoring and conservation of cultural heritage (Marshall and Taçon 2014; Taçon and Marshall 2014). No nationally adopted guidelines for appropriate practice of site management exist, though there are increasing calls for the standardising of monitoring practices, especially at rock art sites (Agnew et al. 2015; Franklin 2014). Effective preservation of sites is reliant on best practice
standards of management principles, but, in Australia, little conservation training is available. Invasive conservation methods, such as the instillation of driplines at rock art sites, can have long term harmful effects (Franklin 2014). At present, a limited number of heritage professionals hold the relevant skill levels, therefore, obtaining advice from an appropriate conservation professional is challenging for the average Aboriginal community.

For Aboriginal communities and others seeking advice about conservation and management, few resources currently exist. For example, there is no centralised web-based database of the contact details of appropriate heritage professionals, no register of archaeologists and conservation professionals who have specialisations in particular areas (e.g. rock art conservation), and no lists of archaeologists who may live and work in a certain area. At present, there is no formalised method for Aboriginal communities to check and control the qualifications of archaeologists and heritage professions who may be engaged to work on their traditional country. Communities, especially in remote areas, may struggle to source appropriately trained advice, potentially leaving sites vulnerable to mismanagement and harm.

9.15 Conclusion and recommendations

The issues detailed in this chapter serve to highlight the challenges Aboriginal communities and other interested stakeholders confront when trying to protect cultural heritage sites. While the focus has been primarily on Queensland, many of the concerns raised here cross state and territory boundaries. This chapter provides a snapshot of the obstacles facing Aboriginal communities who wish to be proactive about their cultural heritage management, who wish to conserve and protect sites on their traditional country beyond simply responding to development applications. All of these challenges are exacerbated by the increasing economic and social pressures on sites, and by the gaps in cultural heritage legislation. The general lack of funding arrangements to manage sites and to capacity build Aboriginal communities exposes sites to neglect or the potential for destruction. While these cultural heritage issues are difficult enough for well organised, well-funded Aboriginal communities, who hold Native Title, to navigate, the challenges only increase when a group has no Native Title, with the consequential diminished access to funding and support.
The following list of recommendations grows out of the concerns explored in this chapter, and it is by no means exhaustive. These proposals detailed here begin to address some of the current barriers to cultural heritage protection, focusing, in particular, on the obstacles faced by Aboriginal communities without Native Title. These recommendations also highlight areas of concern. These measures, both short and long-term, can serve to strengthen cultural heritage management and protection in Queensland and elsewhere in Australia.

For effective cultural heritage management in Australia, there needs to be:

1) Increased acknowledgement in governmental policy and planning documents that the current push to develop northern Australia elevates pressure on cultural heritage sites across the region and that cultural heritage protection measures need to be strengthened accordingly. (See section 9.2)

2) Capacity building in Aboriginal communities to develop cultural heritage tourism as an alternative income stream. (See section 9.2.1)

3) The adoption of a national, unified approach to cultural heritage protection legislation and guidelines. (See section 9.6)

4) The uncoupling of the Aboriginal Cultural Heritage Act 2003 and the Native Title Act, especially in areas of Queensland where there has been a failed Native Title claim, so that Native Title disputes do not colour cultural heritage management decisions. (See section 9.8)

5) Increased independent oversight for compliance to the Duty of Care Guidelines of the ACHA 2003 and the Codes of Environmental Compliance. Acknowledgement that the self-assessing, self-reporting aspects of the legislation are largely ineffective (See section 9.9 and 9.10).

6) Improved communication between DATSIP and Aboriginal communities in the event of damage reporting (See section 9.10).

7) Access to monitor cultural heritage sites on a range of land tenure types needs to be improved, especially in areas not covered by Native Title claims. (See section 9.10.1)

8) Greater awareness of the reluctance of Aboriginal communities to use the Queensland Indigenous Cultural Heritage Database and Register. Require in the ACHA 2003 legislation that all development proponents must check the
database and consult with the community representatives for that area, even if there are no determined Native Title holders. (See section 9.11)

9) Expanded funding options for Aboriginal groups, such as funds from non-profit groups or a diversity of grants, to decrease the dependency of funding solely from development and to spread the funds over a larger geographic area so that groups have the capacity to manage their cultural heritage proactively. (See section 9.13)

10) The development a centralised database with the contact details and qualifications of heritage professionals who can provide advice to Aboriginal communities and the general public. (See section 9.14.2)

11) The provision of standardised training to Aboriginal community members who are engaged in heritage work. (See 9.14.3)

12) Increased specialist training for archaeologists and conservation professionals in cultural heritage management principles. (See 9.14.3)
Chapter 10 Conclusion

10.1 Introduction

This PhD thesis set out to explore the rock art of the Chillagoe-Mungana limestone belt in order to illuminate the socio-cultural interaction of Aboriginal groups in north Queensland prior to European contact. The Chillagoe karst is a significant region of north-eastern Australia because it represents a rich cultural landscape, a focal point for rock art production and occupation for thousands of years. The Chillagoe-Mungana district, however, had been largely underrepresented in archaeological investigation. This thesis sought to address this research gap by updating and expanding the rock art records of the limestone belt and by comparing the Chillagoe assemblage with surrounding rock art precincts. By combining archaeological study with the traditional knowledge of the Wakaman Aboriginal people, this investigation sought to enhance the understanding of the vulnerable karst region. This study also had wider implications for the study of rock art and social groups. Sitting on the border of multiple local Aboriginal groups and wedged between two of the major rock art provinces of north-eastern Australia, the Chillagoe-Mungana limestone belt is an ideal location to examine the rock art of boundary zones and the model of regionalisation.

10.2 Revisiting the research questions and aims

As outlined in Chapter 1, the project encompassed a range of research aims, both practical and theoretical. It is important to revisit these research goals in order to gauge the outcomes of the study. The aims of the project were (a) to catalogue and survey the rock art of new sites in the limestone belt; (b) to update previous studies; (c) to conduct a comparative study of the Chillagoe motifs with other rock art catalogues of surrounding areas of Queensland; (d) to investigate, through consultation with local Aboriginal groups, the traditional knowledge of cultural practices in the Chillagoe district; (e) to examine rock art characteristics on boundary zones; (f) to use the Chillagoe area as a case study to examine issues of Aboriginal cultural heritage preservation in the current legislative and economic context; and (g) to create, together with the Traditional Owners, a full recording of rock art sites in the region as the foundation of a community-controlled cultural heritage database.
In terms of the practical outcomes, this project has generated a comprehensive rock art record for the Chillagoe-Mungana district. The updated rock art site reports contained in Appendix 2, together with the additional documentation for each site given directly to the Traditional Owners (and not included in this thesis due to space limitations), serve as the foundation of a community-controlled cultural heritage database. The site reports produced in this project are intended to support the Traditional Owners in making informed cultural heritage management decisions for the limestone area. The rock art documentation from this project will hopefully be a resource for the Wakaman people well into the future.

In order to achieve the theoretical research goals, several key research questions were posed relating to the rock art of the Chillagoe-Mungana area and the gaps of archaeological and ethnographic research that existed for the semi-arid interior of north Queensland. The research questions formed a foundation for this project, and it is useful to reiterate them here.

1) What are the stylistic characteristics of the rock art in the Chillagoe-Mungana limestone belt? Do these characteristics relate to existing self-differentiating Aboriginal groups?

As seen in Chapter 5, the Chillagoe rock art assemblage is primarily a non-figurative rock art assemblage consisting of 2142 motifs spread over 49 known sites. The rock art was created using six production techniques with engravings predominating. The assemblage developed a stylistic identity in the late Pleistocene and early Holocene. The early non-figurative deeply engraved forms were later echoed in the mid to late Holocene in the painted and shallowly engraved motifs, although the motif forms and production types varied across the limestone belt.

The results presented in Chapters 6 and 7 demonstrate that the Chillagoe rock art assemblage encodes a variety of social messages. Certain features of the rock art reflect the strong cultural links between the Aboriginal groups who gathered at the karst, while other aspects of the assemblage mirror the differences in the group identities. The western and southern sides of the limestone belt, most closely affiliated with the Wakaman people, show evidence of a stencil and engraving based artistic tradition. The north-eastern section of the karst towers, however, appears to reflect the Kuku Djungan
rock art style of limited stencil use, lack of engravings and the presence of certain types of non-figurative forms. The geographic distribution of these stylistic similarities and differences coincides with the known traditional territories of the groups in the Holocene.

The significance of these findings is that clear divisions in the type of rock art produced in particular locations appear to relate to the self-differentiating Aboriginal groups who shared the area in the recent past. The boundaries and connections of the local groups may be visible in the rock art record. This study demonstrates the rock art found along borders of traditional territories provides insight into social groups who interacted and overlapped in a particular geographic location.

2) What insights into the rock art of the recent past can the local Aboriginal communities provide in an area that has little ethnographic information?

This research shows that input from Traditional Owners allows for a more nuanced, multifaceted view of an area. The traditional knowledge in this thesis, shared for the first time outside the Wakaman community, provides the cultural and spiritual context for the archaeological findings. Even though much of the information pertaining to the rock art of the limestone belt remains restricted due to cultural sensitivity, in Chapter 6, the Wakaman people shed light on the enduring cultural significance of the Chillagoe karst.

For the Wakaman Traditional Owners, the limestone belt is a sacred landscape, a ceremonial meeting place for neighbouring Aboriginal groups. The limestone towers were not continually inhabited, but visited periodically for cultural and spiritual motivations, a locale for gatherings, rituals and exchange. When visiting the region, each of the local groups remained on their respective sides of the karst towers, camping in differentiated geographic zones, with the limestone towers forming a geological spine and a shared buffer zone between the respective traditional territories. The caves and rock shelters were used for a variety of cultural activities, and the rock art produced in the region has strong spiritual links for the Wakaman people.

This traditional insight formed the framework for the rock art analysis, and it demonstrates that much traditional knowledge is retained by Aboriginal communities which may be yet unshared. The Wakaman insight, not afforded to prior researchers,
gives perspective to the archaeological conclusions, conclusions which may have been apparent from the rock art results, but would have lacked cultural and spiritual context. This investigation demonstrates that archaeological interpretations are better supported when the project is informed by Traditional Owner input. Indigenous insight, combined with archaeological research, has provided a more complete picture of this boundary area of north Queensland.

This PhD project is one of a growing number of archaeological studies which highlight the need for Indigenous insight to provide the cultural context for archaeological results (e.g. Brady 2010; Brady and Bradley 2014 a b; Cole 2010, 2011; Layton 1992; Stone and Bahn 1993; Taçon 1992, 1993, 2004, 2008; Taçon and Chippindale 1998). Rock art is embedded in a complex social, economic and ritual landscape. When Traditional Owner insight is interwoven with scientific study, a more dynamic, layered and multidimensional understanding of the relationships and connections within this cultural and spiritual sphere emerges.

3) How does the Chillagoe-Mungana area fit into the overall semi-arid regional sequence?

Chapter 8 explored the Chillagoe assemblage’s place in the socio-cultural context of north-eastern Australia. The Chillagoe-Mungana area is a local reflection of the larger semi-arid regional sequence as it mirrors aspects of the local groups who surrounded the limestone belt who, in turn, were parts of larger rock art provinces and extended social networks. The Chillagoe formation appears to comprise the most north-eastern edge of the stencil and engraved art stylistic precinct of the North and Central Queensland Highlands, with the southern, western and north-western sections of the limestone belt having close stylistic links with that semi-arid province. The north-eastern part of the karst, in turn, reflects the painted non-figurative stylistic tradition which stretched north over the Walsh River towards the Great Dividing Range. Faint echoes of the Cape York figurative rock art province even further north can also be found in the Chillagoe assemblage. The Chillagoe karst is significant because it represents the transition zone between major socio-cultural networks in north-eastern Australia.

The close cultural ties and stylistic affiliations shifted through time, however. Chillagoe’s early deeply engraved motifs replicated similar non-figurative motifs spread
throughout northern Australia. In Queensland, these early designs stretched north in to Cape York and south into southern Queensland, but not further east than Chillagoe. The later, Holocene painted art, particularly the stencils and non-figurative motifs, reflected the stylistic traditions of the groups who surrounded the limestone belt and the stylistic variations in their assemblages which emerged in the mid to late Holocene.

The study of the rock art on this boundary zone has shown that the Chillagoe assemblage represents a distillation of the semi-arid sequence into traceable stylistic influences on a specific rock art assemblage. Furthermore, it was demonstrated that the Chillagoe karst is an important linking area between the semi-arid interior of Queensland and the more resource rich coastal and northern parts of the State. The interaction and overlapping of groups at the limestone belt represents a significant crossover and connection zone in north-eastern Australia.

4) How do the rock art results from Chillagoe-Mungana develop the model of regionalisation and fissioning?

Although rock art research into transition zones is still only preliminary, with this study being only one of a few yet undertaken, the examination of the Chillagoe assemblage has implications for the model of regionalisation and fissioning. This PhD project illustrates that investigation of rock art on border areas can yield insight into larger regional forces. Boundary areas, such as Chillagoe, may represent a localised manifestation of increased regionalisation. The Chillagoe example, however, shows that stylistic change in a border assemblage may not always be uniform, and it may not always occur in the mid to late Holocene. As shown in Chapter 8, regionalism, in the Chillagoe karst, appears to have its roots in the Pleistocene. While the pace of change accelerated in the districts surrounding the Chillagoe assemblage in the mid to late Holocene, with different figurative traditions springing up in the areas to the north and east, the non-figurative Chillagoe rock art assemblage remained largely stable.

This study suggests that regionalisation and fissioning did not always exhibit a steady, linear progression, and that boundary areas may display a different regionalisation pattern than the centres of traditional territories Regionalisation, at least on border areas, may be influenced by a range of complex socio-cultural factors which vary over time. Chapter 8 discussed how, at different periods, the rock art of Chillagoe-Mungana
mirrored the larger regional context, adopting elements of the stylistic shifts of the rock art precincts around the karst, but the assemblage always maintained a local identity. Regionalisation in Chillagoe happened early and only parts of the assemblage subsequently varied.

These findings are not isolated to the Chillagoe-Mungana area. There is evidence from other regions that regionalism was not strictly a mid to late Holocene phenomenon and that the process can be more complex than a simple linear progression from non-figurative to figurative designs (see Mulvaney 2011; Ross 2013; Franklin 2007; McDonald and Veth 2012b; Cole 2012). The main implication of this PhD thesis, however, is that more research should be targeted on boundary areas because they may provide valuable insights into the nature of interaction of larger rock art provinces.

Research into boundary areas and rock art junctions in Australia is still in its infancy. This thesis represents only one of a small number of projects focused on border zones (see also Cole 2016; Taçon 2005a; 2008; 2013; Taçon et al. 2003). More research is needed into the edges of the major rock art precincts in Australia to see whether the results and trends suggested by this study are replicated elsewhere. This PhD project does, however, demonstrate that boundary studies can be a productive method of rock art investigation. Rock art found along boundaries can give insight into the social dynamics of the groups who shared the border. Junction zone research provides another approach to rock art inquiry which may illuminate the social, cultural and economic interactions of Aboriginal groups who inhabited specific regions in the past.

5) Are there certain identifiable characteristics for rock art in ethnographically-known boundary areas? How do overlapping rock art zones manifest themselves in rock art motifs?

The rock art of Australia is composed of a myriad of diverse styles and attributes. While the particular stylistic characteristics of individual Chillagoe motifs will not be found in other locations, what this PhD thesis suggests is that boundary areas may encode complex social messages in their rock art assemblages. Chapters 6 and 7 show that aspects of Chillagoe rock art promoted group ties and affiliation, while other features of the rock art displayed cultural distance. For the Chillagoe-Mungana area, cohesion,
rather than competition, characterised the interaction of local groups, but cohesion between groups who maintained strong individual identities.

The results from this research, however, are only preliminary in terms of whether this pattern of interaction is true for other boundary and buffer zones in Australia. This project does suggest, however, that overlapping rock art zones contain complicated layers of cultural information. These boundary assemblages may exhibit the changing flow of connections and spheres of influence. Social and economic information encoded about the groups who used the buffer zone is visible in the rock art record. Rock art on borders can provide a glimpse into the changing allegiances and alliances of surrounding groups in the past.

Another aspect of this PhD thesis was the examination of cultural heritage management issues of rock art sites in the modern Australian context.

6) How do the cultural heritage protection issues in the Chillagoe area illuminate the challenges facing Aboriginal communities and other heritage managers?

The damage to a significant rock art site discovered during fieldwork for this project highlighted the obstacles facing Aboriginal communities and heritage managers. Chapter 9 demonstrated that these challenges are numerous and increasing. Gaps in the current heritage legislation, diminishing support for Aboriginal communities in funding and capacity building, and limited access to professional advice all impede effective cultural heritage management of sites in Queensland and elsewhere in Australia. The Chillagoe-Mungana case study has shown that, at present, cultural heritage management in Queensland is largely reactive and dependent on the needs of development. For Aboriginal communities and heritage professionals who wish to proactively protect and manage cultural heritage sites, navigating the current Australian economic and legislative context with little support is progressively difficult. For groups without Native Title, these challenges only increase.

This project demonstrates that the struggles confronting Aboriginal groups in the Chillagoe region are not isolated. The cultural heritage management issues in the karst are replicated elsewhere in Australia, and they underscore the need for greater support for vulnerable cultural heritage sites nationally.
7) Can the Chillagoe-Mungana case study furnish any recommendations for effective cultural heritage management in the modern Australian context?

The twelve recommendations listed in Chapter 9 represent some initial steps to strengthen cultural heritage practices and the capacities of Aboriginal groups, heritage professionals and other stakeholders. One aim of this thesis is to raise awareness of the multitude of obstacles facing communities in the current drive to develop northern Australia. The issues surrounding cultural heritage management in modern Australia are complex and tackling them will take the coordinated effort of government, Aboriginal groups and the wider Australian community. It is hoped that by crystallising some of the problems and highlighting areas of concern, this thesis will help drive the process forward, even in the smallest way.

10.3 Limitations of the research and areas of future study

While this project has built on the foundations of earlier studies, refining and expanding the understanding of the Chillagoe rock art assemblage on a local and regional level, these findings are only the beginning. This project represents merely preliminary archaeological study into the semi-arid interior of northern Queensland. Vast areas of the region remain uninvestigated. Further research would help illuminate this important part of north-eastern Australia and other boundary zones across the nation.

10.3.1 Future projects for the Chillagoe karst: excavations

There are 49 known rock art sites scattered across the limestone belt, many with deep deposits and excellent preservation contexts. Only five of these sites have been targeted for excavation so far. Several newly recorded rock art sites both in rockshelters and deep caves exhibit excavation potential. One site in particular, CE22, recorded for the first time during fieldwork for this PhD, contains numerous cupules, painted motifs and surface artefact scatters. This site and others similar would be intriguing to excavate in order to correlate the results with future direct rock art dating projects. Further excavation work would serve to enhance the findings of this PhD thesis.

10.3.2 Future projects for the Chillagoe karst: direct dating of motifs

One of the primary recommendations for any future work in the karst would be the performing of direct dating on a range of motif types, especially the cupules and
stencils, given the advances in the science of rock art dating which have occurred in the past few years. While certain motif types have been targeted in past research projects (see Chapter 3), the rock art motifs of the Chillagoe assemblage have not been comprehensively dated. The recent advent of the successful use of uranium-thorium dating techniques in limestone cave environments in Southeast Asia (and elsewhere), yielding Pleistocene dates for pigment rock art, would be directly applicable and extremely advantageous if employed at Chillagoe (see Aubert et al. 2007, 2014; Pettitt and Pike 2013; Pike et al. 2005; Taçon et al. 2010, 2011; O’Connor et al. 2010). Comparing uranium-thorium results with existing rock surface accretions and C\textsuperscript{14} dates and any excavation findings would clarify the chronology of the rock assemblage. Further dating work would help to refine the relative sequence posed in Chapter 8.

10.3.3 Future projects for the Chillagoe karst: laser scanning of vulnerable sites

Many of the sites in the Chillagoe karst are vulnerable to a range of threats, and multiple hurdles to the physical preservation of the rock art sites exist. The use of 3D laser scanning of particularly significant sites, however, would provide a comprehensive digital record, preserving the sites, at least virtually, for future generations. At present, no sites in the limestone belt have been documented using this technology. Laser scanning of key sites should be a priority for further research in the region.

10.3.4 Future projects in the surrounding region: Wakaman country

More archaeological work should be concentrated in the area to the west of the Chillagoe limestone belt, in the central region of the Wakaman Traditional Estate. At present, very little archaeological investigation has occurred in this part of Queensland, a major gap in archaeological knowledge of occupation and rock art production of the semi-arid north. This PhD project represents only a fraction of many hundreds of kilometres which have yet to be surveyed.

With further studies concentrated in this area, a clearer understanding of the northern reaches of the NQH rock art province could be established, as well as the nature of the interaction between the Wakaman people and their closest southern neighbours, the Ewamian. It would be interesting to investigate the stylistic differences of the Wakaman motifs away from the limestone belt, to compare the boundary area assemblage with the motifs found in the heart of traditional Wakaman territory, to see the extent of the
variation within the larger province. A comparison of rock art on the edge and in the centre of Wakaman country may help to develop the model of regionalisation further.

10.3.5 Further regionalisation investigation

This project is limited in scope because it has only focused on a single border area. Another avenue for future research would be to compare this project’s findings with the rock art of other boundary areas, particularly where the stylistically distinct rock art provinces overlap, to see whether the results of the Chillagoe area hold true for other regions, or whether the Chillagoe example is strictly a localised phenomenon.

Also, more research needs to be done in the rock art of areas of seemingly stylistic stability (see, for example, Cole 2012). This PhD project suggests that because Chillagoe existed on the fringes of multiple traditional territories, the forces driving increased regionalism were diminished. More investigation into areas on the edges of traditional territories may provide a greater understanding of why the Chillagoe assemblage essentially remained unchanged, potentially over thousands of years, while all around stylistic diversity blossomed as the probable result of regionalisation and fissioning.

10.4 Conclusion

The Chillagoe-Mungana limestone belt is a significant, sacred cultural landscape in north-eastern Australia. For thousands of years, Aboriginal people returned to the caves and rockshelters to paint and carve the stone, creating designs which symbolised cultural connections and territorial boundaries. They gathered amongst the karst formations and ventured into the dark depths of the towers. Through times of environmental and social change, and even the arrival of Europeans, the towers stood tall in the semi-arid landscape, the embodiment of story and lore. Today, the Chillagoe-Mungana karst is increasingly threatened by development and population pressures. The Traditional Owners face many challenges in its cultural heritage management. It is hoped that this PhD thesis will aid them and others in protecting the karst’s rich, ancient cultural landscape and that the findings from this project will be an important resource for future generations.
Appendix 1

Appendix 1.1 Ethics protocol statement

This PhD project was granted ethical clearance for Human Ethics Research in June 2012 and was conducted per Griffith University Ethics protocol HUM/14/12/HREC.

Appendix 1.2 CE additional material

A1.2.1 CE Non-figurative motif counts

![Non-Figurative Motif Counts Diagram]
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### Appendix 1.3 CW additional material

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266
A1.3.2 CW Non-figurative motif counts
Appendix 1.4 ME additional material

A1.4.1 ME Non-figurative motif counts

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  - Other Shape Variant
- Enclosed Geometric: 51
  - Circle Variant: 6
  - Rectangle Variant
  - Triangle Variant
  - Oval Variant: 43
  - Crescent Variant: 2
- Open Geometric: 36
  - U-Shape
  - Straight Line (Vertical/Horizontal): 16
  - X-Shape
  - T-Shape: 1
  - Curved Line: 5
- Linear Non-Figuratives: 46
  - ‘Star’ Shape: 33
  - Combi Shape: 6
  - Simple LNF: 6
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  - Dot Series and Clusters
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<td></td>
<td></td>
<td>1</td>
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<td>0.5%</td>
</tr>
<tr>
<td>Colour Total</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>64</td>
<td>20</td>
<td>8</td>
<td>44</td>
<td>38</td>
<td>12</td>
<td>25</td>
<td>219</td>
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<td></td>
<td>100%</td>
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</table>

### Appendix 1.5 MW additional material

#### A1.5.1 MW colours

<table>
<thead>
<tr>
<th>Colour</th>
<th>MW44</th>
<th>MW45</th>
<th>Totals</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>3</td>
<td>32</td>
<td>35</td>
<td>79.5%</td>
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<tr>
<td>White</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>11.4%</td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red - White</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red - Black</td>
<td>3</td>
<td></td>
<td>3</td>
<td>6.8%</td>
</tr>
<tr>
<td>Red - White - Black</td>
<td>1</td>
<td></td>
<td>1</td>
<td>2.3%</td>
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<tr>
<td>Colour Total</td>
<td>11</td>
<td>33</td>
<td>44</td>
<td>100%</td>
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</table>
Appendix 1.6 RE additional material – colours

<table>
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<th>Colour</th>
<th>RE50</th>
<th>Totals</th>
<th>% of Total</th>
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<tbody>
<tr>
<td>Red</td>
<td>4</td>
<td>4</td>
<td>100%</td>
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</table>

Colour Total: 4/4 (100%)
Appendix 1.7 RW additional material

A1.7.1 RW Non-figurative motif counts

<table>
<thead>
<tr>
<th>Motif Type</th>
<th>RW46</th>
<th>RW47</th>
<th>Total</th>
<th>% of Total</th>
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<td>Grid Patterns</td>
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<tr>
<td>Enclosed Geometric</td>
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<td>0</td>
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<tr>
<td>Open Geometric</td>
<td>7</td>
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<td>7</td>
<td></td>
</tr>
<tr>
<td>Linear Non-Figuratives</td>
<td>2</td>
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<td>2</td>
<td></td>
</tr>
<tr>
<td>Dot and Dot Variations</td>
<td>3</td>
<td></td>
<td>3</td>
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<tr>
<td>Irregular Shapes</td>
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<td>3</td>
<td></td>
</tr>
<tr>
<td>Non-Figurative</td>
<td>18</td>
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<td></td>
</tr>
<tr>
<td>Rectangle Variant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oval Variant</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Shape Variant</td>
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<td></td>
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</tr>
<tr>
<td>Circle Variant</td>
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<tr>
<td>Rectangle Variant</td>
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<tr>
<td>Straight Line (Vertical/Horizontal)</td>
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<td>4</td>
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</tr>
<tr>
<td>‘Star’ Shape</td>
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<td></td>
<td></td>
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<tr>
<td>Dot</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Simple (Solid Infill)</td>
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<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Complex (Dot/Line Infill)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triangle Variant</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Oval Variant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crescent Variant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-Shape</td>
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<tr>
<td>X-Shape</td>
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<td></td>
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<tr>
<td>T-Shape</td>
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<td>Curved Line</td>
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<tr>
<td>Parallel Lines</td>
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<tr>
<td>Tally Marks</td>
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<tr>
<td>Colour Total</td>
<td>4</td>
<td>19</td>
<td>23</td>
<td>100%</td>
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</table>

A1.7.2 RW colours

<table>
<thead>
<tr>
<th>Colour</th>
<th>RW46</th>
<th>RW47</th>
<th>Totals</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>43.5%</td>
</tr>
<tr>
<td>White</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>30.4%</td>
</tr>
<tr>
<td>Black</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>8.7%</td>
</tr>
<tr>
<td>Red-White</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>17.4%</td>
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<tr>
<td>Colour Total</td>
<td>4</td>
<td>19</td>
<td>23</td>
<td>100%</td>
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</tbody>
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### Appendix 1.8 Sample recording form

<table>
<thead>
<tr>
<th>Site number</th>
<th>Site Name</th>
<th>Date/Time/ Weather Conditions</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>GPS</th>
<th>Location and Type</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Orientation/ Site Direction/Site Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Associated Artefacts/Deposits/Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Rock Art General Description (Technique/Pigment/Position/Superimposition)</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Motif Inventory and Additional Site Notes (Site Plans/Site and Image Condition/Management Issues)</td>
</tr>
</tbody>
</table>
References


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Unpublished BA (Hons) thesis, Department of Archaeology and Palaeoanthropology, University of New England.


