

Results of archaeological surveys of the Pianamu cultural landscape, central Cape York Peninsula, 2014-2016

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Abstract

This paper presents preliminary results of archaeological investigation of the northern Cape York Peninsula highlands, the homelands of the Kuuku I'yu (northern Kaanju) people. Despite intensive and long-term research programs elsewhere in Cape York Peninsula, no previous archaeological work has been undertaken in this particular region. The aim of this research was to identify the location of archaeological places and artefacts throughout the Kaanju Ngaachi Indigenous Protected Area (IPA) and the broader Wenlock region. The preliminary research results outlined here include the recording of rock art, culturally modified trees, lithic material, pastoral sites and the remains of a Native Mounted Police camp. This study clearly indicates that the highlands of Cape York Peninsula have substantial research potential; however, further work is required to achieve a greater understanding of both physical and cultural landscapes.

Introduction

Despite several major archaeological research programs undertaken throughout Cape York Peninsula (CYP) (e.g. Cole 1995, 2004, 2010; David 1998; Flood 1987; Greer 1995, 1999, 2009; Morrison et al. 2010, 2012, 2013; Morwood and Hobbs 1995a, 1995b; Rosenfeld et al. 1981) there remains extensive areas which have seen minimal or even no prior archaeological work. Pianamu, comprising the highlands at the northern margins of the Great Dividing Range, to the north of Coen, is one such area (Figure 1). This landscape is the Ngaachi (homelands, or Country *sensu* Sutton 1994) of Kuuku I'yu Traditional Custodians, who form part of the wider Kaanju cultural bloc, with custodial responsibilities to manage landscapes formed by Pianamu (Rainbow Serpent) and other creator beings (Chuulangun Aboriginal Corporation [hereafter Chuulangun] 2011). Chuulangun has developed a heritage database and associated cultural heritage management plan, identifying Story Places, historical sites, culturally modified trees (CMT) and several rock art sites in the region (Chuulangun 2011). This paper serves as an introduction to the archaeology of this area and outlines results of field surveys undertaken as part of Tutchener's PhD research (Tutchener 2018). This paper reports the results of one of the aims of this research, which was to identify the location of archaeological places and artefacts throughout the Kaanju Ngaachi Indigenous Protected Area (IPA) and the greater Wenlock region. This falls within the broader aims of Chuulangun, who seek to facilitate scholarly research agendas that extend knowledge and understanding of Ngaachi, and the deep history of Kuuku I'yu peoples.

Previous research in Cape York Peninsula

The archaeological potential of CYP was first highlighted by Wright (1963, 1964, 1971), who undertook initial exploratory excavations of rockshelters near Laura and shell mound sites near Weipa (Figure 1). Research into rock art and regional occupation chronologies near Laura further highlighted the archaeological, scientific and cultural significance of rockshelters in the southeastern CYP (Flood 1987; Rosenfeld et al. 1981; Trezise 1971, 1973) and was followed by a major

research program by Morwood and Hobbs (1995a, 1995b) who excavated nine rockshelter sites. This research concluded that multidisciplinary regional research across tropical northern Australia could revolutionise our understanding of Aboriginal occupation of the continent. Cole has continued this work over many years, focussing on rock art traditions and cross-cultural interactions near Laura and the surrounding region (Cole 1995, 2004, 2010, 2015, 2016; Cole and Buhrich 2012, Cole et al. 2002). Research led by David influenced our understandings of long-term human occupation patterns and regional rock art traditions extending across the Chillagoe-Palmer and Laura regions (David 1998; David and Chant 1995; David and Lourandos 1997, 1998, 1999). Results of this work were integrated into regional syntheses of long-term occupation trends, which point to distinct periods of rapid social, technological and economic change – particularly from the early-to-mid-Holocene onwards (Haberle and David 2004). Importantly, though, none of the aforementioned work has focused on the northern highlands, and it remains unclear whether trends in southeast CYP are representative of wider long-term occupation patterns further north.

Shell mounds represent a second key focus of work in CYP, however, as this work is entirely coastal it is of less relevance to the present study. Studies investigating colonial era Indigenous archaeology and heritage in CYP have also been notable. Early work by Greer and others within the northern Cape York Peninsula (Greer 1995, 1999, 2009, 2010; McIntyre-Tamwoy 1998, 2000) has contributed to a transformation in understanding of the significance of colonial period heritage places and wider cultural values associated with the formation of cultural landscapes by ancestral creator beings. Critically, Greer was able to generate these insights through the development of a novel approach to community engagement, arguing that archaeological research – if designed carefully and undertaken in close collaboration with community members – could contribute to furthering the aims of communities by exploring aspects of contemporary identity, thereby making the outcomes of archaeological research more relevant (Greer 2010). Others have expanded this general research approach to focus on places and histories of direct relevance to local Indigenous communities, often at

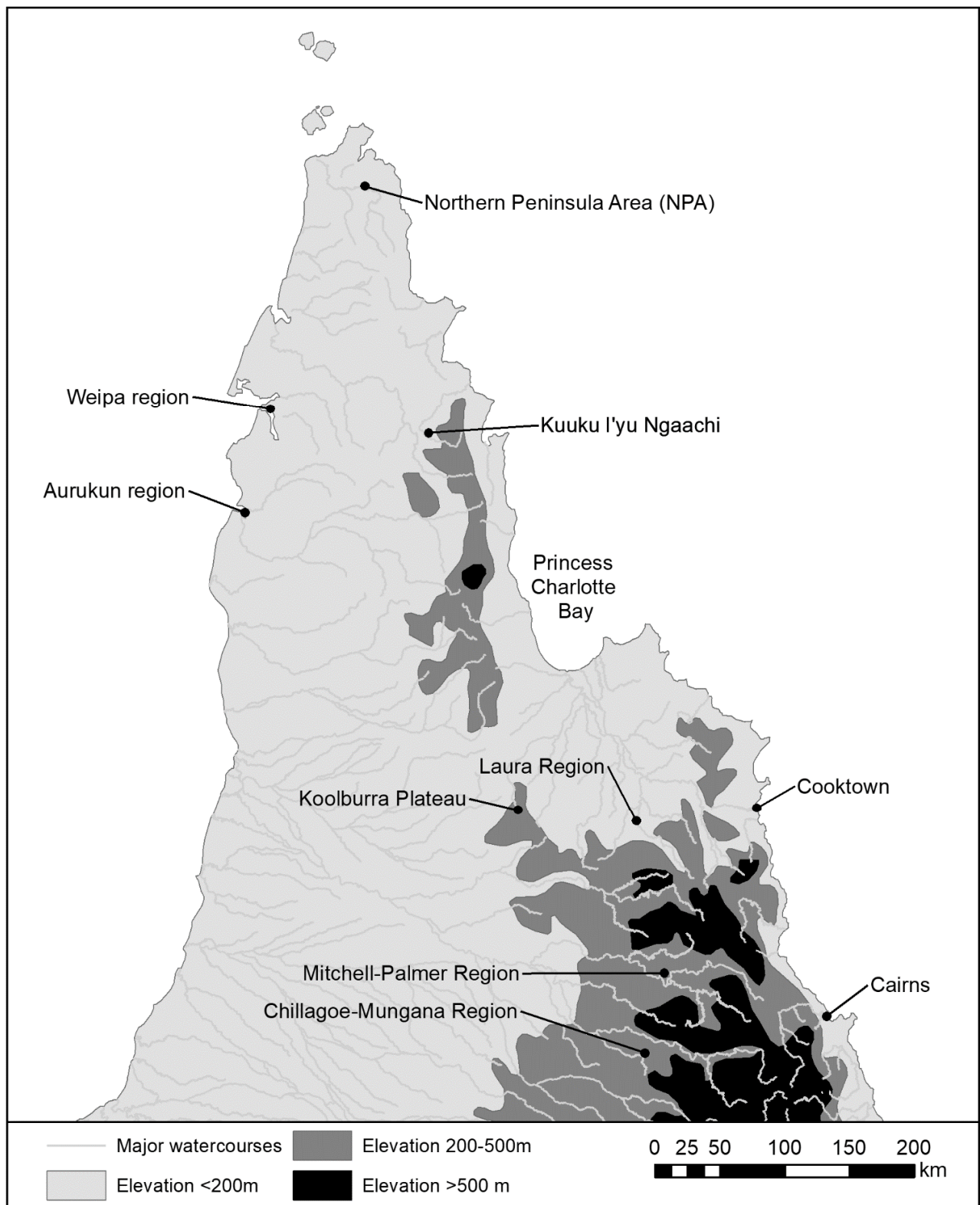


Figure 1. Cape York Peninsula, showing the location of the Kuuku I'yu Ngaachi study area.

their request. Many of these studies have focussed on former mission landscapes (McIntyre-Tamwoy 2010; Morrison et al. 2010, 2019; Sutton and Conyers 2013) or have undertaken more widely-oriented investigations of Indigenous heritage values (Cole et al. 2002; McNaughton et al. 2016). Within this context, what could be termed 'traditional' historical archaeological studies focused on sites associated with European settlement have been restricted to mining landscapes in the former goldfields to the south of the study area (Burke and Grimwade 2013, Comber 1995, Jack et al. 1984), and to a lesser extent, the Wenlock Goldfields (Lennon and Pearce 1996, Tutchener et al. 2017).

A number of archaeological projects focusing specifically on the western coast of CYP have studied culturally modified trees (CMTs) and mission sites, providing a comparative foundation for the current study (Morrison and Shepard 2013; Morrison et al. 2010, 2012, 2019). These studies found that the practice of harvesting sugarbag from trees by Indigenous people on the west coast of CYP intensified during the colonial period, with honey used as a trade item.

While research in CYP has produced new insights and approaches that have influenced and shaped a range of debates, it is evident that large areas have seen little or no formal archaeological work (Williams et al. 2014). It is important to acknowledge that Indigenous ranger groups – which have a significant history in CYP – represent prominent hubs for land and heritage management work with and for local custodians, with many having compiled substantial databases of cultural heritage places. Examples of such work includes a database created by the Chuulangun Aboriginal Corporation, to which the results presented in this paper contribute.

Kuuku I'yu Ngaachi

The homelands, or Ngaachi, of Kuuku I'yu people comprises some 30 clan estates that cover approximately 8400km² of northern central Cape York Peninsula, centred on the upper Wenlock and Pascoe Rivers (Figure 2). The Chuulangun Aboriginal Corporation is the peak body for administering land, resource and heritage management on behalf of a wider group of Kuuku I'yu Traditional Custodians and families. In 2009, an Indigenous Protected Area was declared over a large portion of Kuuku I'yu Ngaachi, and this represents a key focus of management activity by Chuulangun. The hub for this program is a small outstation and ranger base that has been established on one of the central clan estates (Chuula), where Chuulangun staff, their families and other Kuuku I'yu families live or visit. Chuulangun has been very active in the development of planning and policy frameworks to guide the management of both the IPA and non-IPA portions of Kuuku I'yu Ngaachi (Chuulangun 2011). Thus, the results generated through this research are being integrated into a broader framework established and managed by Chuulangun as a basis for ongoing management, tourism, education and research programs.

The physical environment of the study area is varied and encompasses floodplains, escarpments and the northern portions of the Great Dividing Range. This landscape is dynamic as a result of high rainfall typical of much of tropical northern Australia, which contributes to seasonal flooding of watercourses, lagoons and the weathering of rock formations. This portion of the Great Dividing Range is in the order of 200–400m above sea level (ASL), and is comprised of the

Jacky Jacky, Mount Tozer, Janet and Iron Ranges, with intervening areas of low elevation (100–200m ASL) sandplain and incised drainage systems. Many of the secondary river systems in the area run into the larger primary systems of the Pascoe and Wenlock Rivers, draining east to the Coral Sea and west to the Gulf of Carpentaria, respectively.

The variable topography and geology encourage equally diverse vegetation communities (Figure 2). Most extensive are a range of *Eucalyptus* spp. woodland and open forests, occurring both on low-lying plains and some areas of higher elevation – particularly to the west of the highest elevated ranges. A notable species in such ecosystems is the Cooktown ironwood (*Erythrophleum chlorostachys*), a dense, termite-resistant hardwood on which evidence of human modification and scarring is frequently found elsewhere in northern CYP (Morrison and Shepard 2013). These woodlands are complemented by large areas of *Melaleuca* spp. forest on depositional plains with portions of open *Eucalyptus* spp. forest on floodplains. Riverbanks support evergreen closed forest that ranges from a single tree to 150m in width and can range from 3 to 30m in height (Neldner and Clark 1991:7). Rainforest is most extensive in the eastern portions of the ranges and upland areas, as well as on the adjacent low coastal plains to the east of the Great Dividing Range.

Aims and Methods

Research was initiated in early 2014 when Chuulangun contacted Morrison regarding the development of a long-term research program in the northern CYP highlands. This commenced with a discrete pilot project funded by Chuulangun to record identified rock art sites, develop management recommendations and undertake reconnaissance landscape surveys as a basis for planning other research projects in the study area (Morrison 2015). This also coincided with the commencement of Tutchener's PhD research project, focused on the colonial interaction between Europeans and Kuuku I'yu peoples (Tutchener 2018). The results presented here largely emerge from this latter work conducted through 2015–2016.

Field Surveys

The primary focus of field surveys has been to address general questions about the distribution and character of both pre-colonial and colonial era archaeological sites, with an emphasis on the latter. Archaeological surveys for this project took place over three years (2014–2016) and comprised of three phases, during which all sites located were recorded with a handheld GPS. These surveys were conducted by Tutchener with student volunteers from Flinders University and James Cook University, with the assistance of Chuulangun rangers.

The archaeological potential of various landforms within the study area was considered before the selection of survey areas. If features of a site were unsafe to record, for example if a sugarbag scar was too high in a tree, it was not measured. The surrounding landscape was then surveyed to find both the site extent and any other sites that may be in the vicinity. These surveys used a purposive strategy (Richards 2008) focusing on landforms near water sources (rivers, lagoons and creeks). However, an important limitation of this strategy included reduced visibility due to dense grass and vegetation.

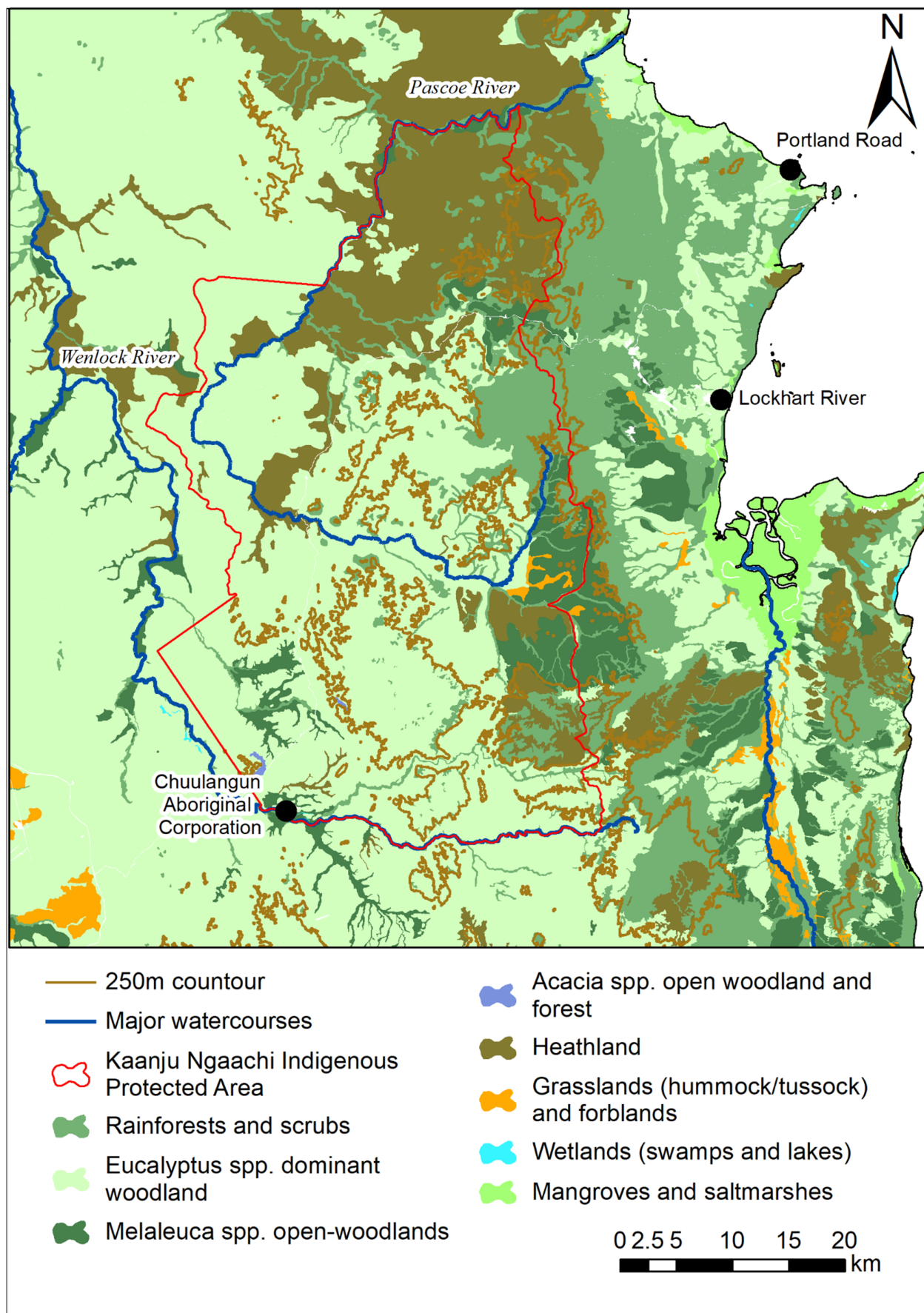


Figure 2. Kaanju Ngaachi Indigenous Protected Area and vegetation in the region.

Escarpment areas were also targeted, as these contain rockshelters where rock art is more frequent, and the elevation provides a good vantage point of the landscape. Owing to the inaccessibility of many of these areas, it was necessary to traverse substantial distances by foot, at times over 5km, to reach these targeted landforms. This provided an opportunity to survey areas that held less archaeological potential (e.g. floodplains to the north of the Wenlock River).

Culturally Modified Trees

Culturally modified trees (CMTs) are a common element of the archaeological record for the northern CYP (Morrison et al. 2010, 2012; Morrison and Shepard 2013) and had previously been identified in the present study area by Chuulangun rangers (Chuulangun 2011). A consistent approach to recording CMTs was considered essential in order to establish a robust regional CMT database for analysis. Visible axe marks were an essential requirement for the identification of a CMT. Individual scars (length and width) were recorded (where possible) from the dry face between the furthest visible axe marks. The height of the scar above ground (HAG) was also recorded (from the ground to the lowest dry face axe mark). Where possible, the approximate (or actual) tree height, species, condition, axe type and the number of scars were recorded. Scale photographs were taken of all features, and these were used to measure the aperture width and length for sugarbag scars after the fieldwork was completed, using the software program ImageJ. This allowed data to be compared with other colonial era CMTs recorded in the greater western CYP region (Morrison and Shepard 2013). The aperture area of sugarbag CMTs has previously been used to explore changes in Indigenous foraging behaviour before and during the colonial era (Morrison and Shepard 2013). Specifically, Morrison and Shepard (2013) note an increase in aperture size closer to European settlements and argued that this suggested more intensive methods of extraction.

An important distinction was made at the time of recording and double-checked when the field data was collated to determine what type of axe (steel or stone) was used to create the CMT. Steel axe marks, even after weathering, leave clear almost straight lines whereas stone axe marks are typically 'broad, asymmetrical "bludgeon" marks, with possible crushing of the underlying sapwood' (Burke and Smith 2004:227). Subjectivity in the use of this metric has been minimised through the analysis of the aperture size of sugarbag CMT scars (not the dry face scar, but the size of the actual hole used to access the tree cavity), as per Morrison and Shepard (2013). CMT stumps were also recorded as they have been shown to be related to the intensive harvesting of sugarbag (Morrison and Shepard 2013) and often have the rest of the CMT in the form of the felled trunk lying adjacent to the stump.

Other Site Types

A range of other site-types were identified and recorded, although often only at a preliminary level. The analysis of the attributes of lithic material, for example, was not a major focus of initial surveys. Consequently, only general information about raw material type, dimensions, and platform type along with notes relating to other observed features (for example retouch) were recorded. When located,

an isolated flake or core was recorded at this level, but if a lithic scatter contained more than 20 artefacts, only the number, site dimensions and material types present were recorded, and the site left for more detailed documentation at a later date. These larger concentrations of lithics are planned to be revisited as part of future research programs.

Several cattle yards were also identified. Measurements of the girth and height for each post were taken, along with the techniques of manufacture, state of preservation, distance to water, and any associated material culture in the immediate vicinity. Ethnographic and historical sources, where available, were also synthesised (Tutchen 2018) regarding these sites in order to understand their placement and naming within the landscape and to explore possible cross-cultural interactions.

The site of a Native Mounted Police Camp at Clayhole Creek was also recorded (see also Della-Sale 2013). A site plan of this colonial period place was produced, though further detailed work is required at this locality.

Results

Surveys within the study area covered 6km² with 293 sites recorded. The entire study area was not surveyed, however, where sites were found they are shown in Figure 3.

Rock Art Sites

Four rock art sites were shown to Morrison (2015) by Chuulangun Rangers in 2014. We present preliminary information about these sites in order to provide a full picture of the archaeological potential of the region. A more detailed analysis has been undertaken (Marshall 2019) and will be reported in detail elsewhere.

Chuula 1 (CH-01) occurs on the upper slopes of a sandstone escarpment, with a steep gully below. The site is located at approximately 175m ASL and the vegetation comprises open savannah woodland on a relatively steep (30-45°) slope. Three art panels were recorded, each containing engravings and paintings (Figure 4). The majority of the art includes either engraved abstract motifs (vertical line series and tracks), some with red pigment applied, and seven distinct paintings, all zoomorphic, and heavily impacted by weathering. Seventeen stone artefacts were identified on the shelter floor, including 13 quartz flakes, 1 chert flake (with retouch), 1 quartz hammer stone and 2 quartz cores.

Chuula 2 site (CH-02) is located 50m east and immediately downslope of Chuula 1, near the base of the escarpment at ~162m ASL. The shelter comprises a narrow 15m² overhang on the eastern side of a large sandstone outcrop and faces east-southeast. The shelter floor is gently sloped and retains little sediment. Areas marked by water flowing across the rock surface are readily apparent and are indicated by black discolouration. Three rock art panels were identified, each with a relatively unique assemblage of motifs. The most frequent motifs are engraved lines, though some anthropomorphic and zoomorphic figures are also present including prominent turtles, fish or lizards, and tortoise (Figure 5). The text 'R K A' has been engraved on the panel and is superimposed over several painted figures and represents the only obvious colonial-era motif identified in the study area to date. Some 30 quartz flakes were distributed over an area 50m² downslope of the shelter, on an area of rocky scree.

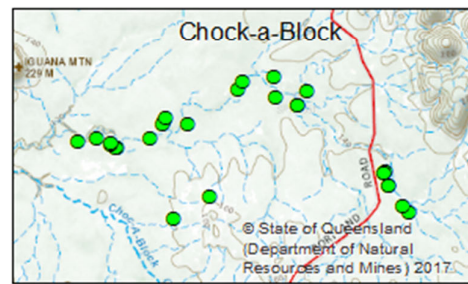
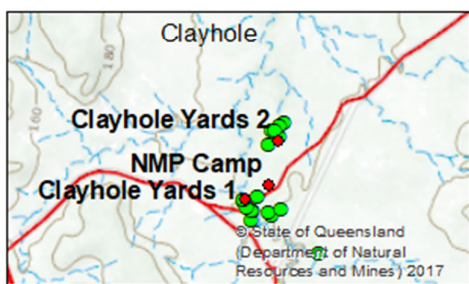
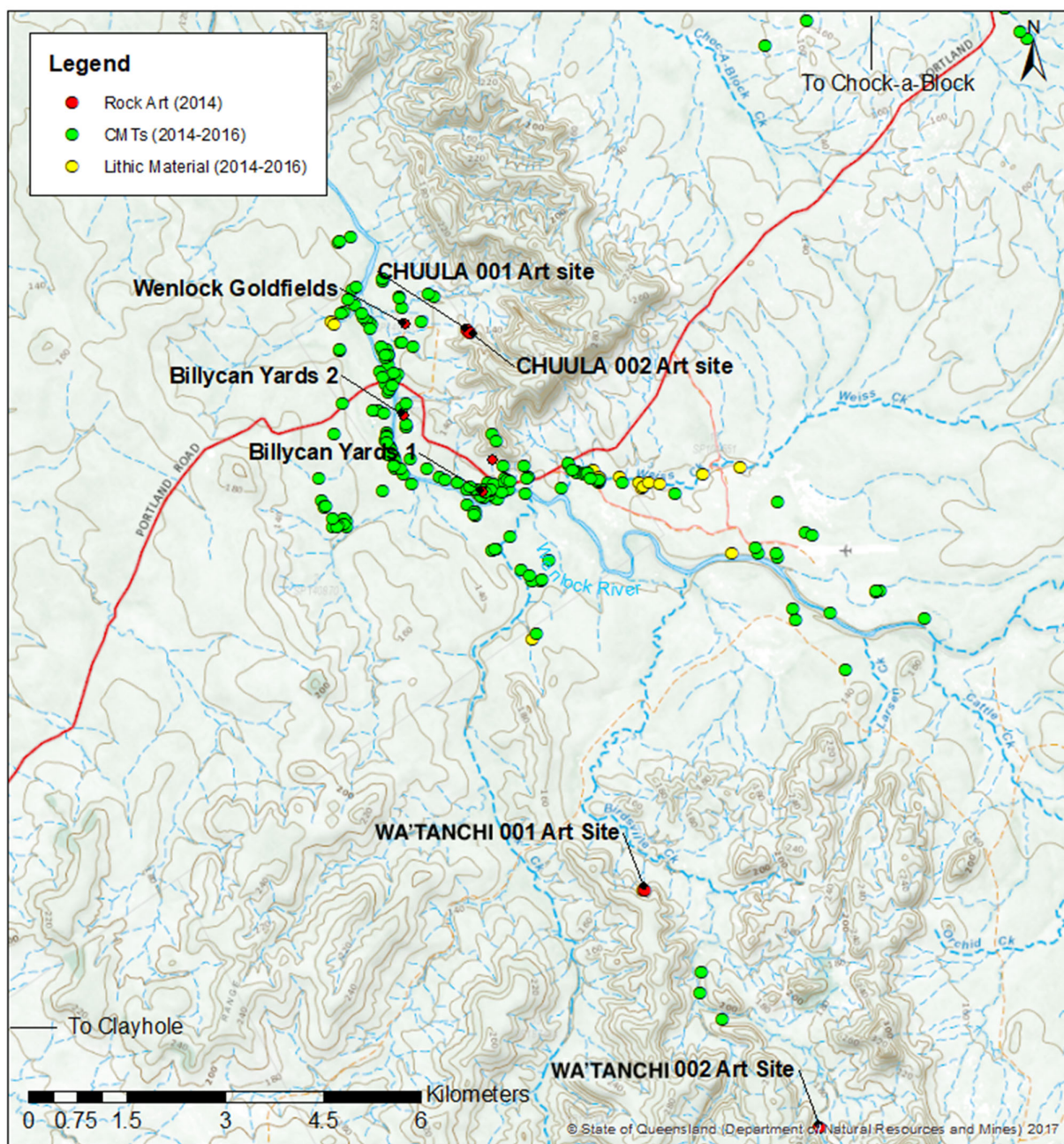


Figure 3. Distribution of archaeological sites identified across the study area.



Figure 4. Chuula 1, Panel 1 showing line series.



Figure 5. Chuula 2, Panel 1, showing various zoomorphs.



Figure 6. Wa'tanchi 1, Panel 4, showing engravings and pigment art.

A further two rock art sites were recorded within the Wa'tanchi Clan Estate, to the south of the Wenlock River (Figure 2). The first of these, Wa'tanchi 1, is located at the foot of a 20m sheer escarpment and seasonal waterfall overlooking a small gully and is some 50m long in total with a number of panels and intensive areas of motif production (Figure 6). This site contains the largest assemblage of motifs identified in the study area to date, featuring red-orange anthropomorphic and zoomorphic motifs including a potential jellyfish and stingray, and several tracks and lines. One panel is set within a 2m by 0.5m recess, and displays a dense assemblage of pigment art, including lines and other abstract designs, as well as several anthropomorphs. Of particular note at this site are a cluster of deeply incised geometric engravings including lines, crosses and inverted 'U'- and 'Y'-shaped motifs on a near horizontal surface, and partially covered by shelter sediments. Occurring on a vertical wall above this platform was a red anthropomorphic figure depicted in a horizontal position with a series of four short lines passing through the abdomen (Figure 6).

The Wa-tanchi 2 site is a small (15m²) sandstone shelter adjacent to the upper reaches of Bairdsville Creek, set within a narrow stretch of dry vine forest. Several quartz flakes were identified on the shelter floor, along with a single motif within a narrow recess at the rear of the shelter. This consisted of 16 painted brown-red parallel vertical lines, each approximately 5-8cm in length. The site is optimally placed adjacent to a spring-fed creek and has high excavation potential in future research.

Culturally Modified Trees

In total, 270 individual CMTs have been recorded in the study area to date. By far the most numerous CMT type identified are stumps, which make up 46% of the total CMT count. Sugarbag CMTs comprise 31% of those recorded, while woomera CMTs and felled CMTs (logs) each account for 11% (Table 1)

A majority of the CMTs recorded were dead or in otherwise poor condition (n=213, 78.8%) with a large proportion being either felled CMTs or stumps (n=154, 57%). However, 17 (6.2%) of the dead CMTs recorded were assessed as being in good condition, and a number were either standing or propped up against a rock face. Although 40 (14.8%) of the CMTs were alive, only 25 (9.2%) were healthy, while 15 (5.5%) were considered to be in a poor condition. The largest number of CMTs, when recorded by species, was the Cooktown ironwood (*Erythrophleum chlorostachys*); as this tree is termite resistant and very dense, it dominated the assemblage at 98.8% (n = 267), with one each on messmate (*E. tertradonta*), tea tree (*Melaleuca* spp.) and sandalwood (*Santalum spicatum*).

The girths of 260 CMTs were recorded; the average girth recorded as 91.1cm with a minimum of 23cm (a very young tree) and a maximum of 259cm. The average girth is indicative of the moderate maturity of many of the CMTs in the study area.

Felled CMTs and Stumps

Felled CMTs form a significant proportion (n=29, 11%) of the recorded CMTs, with CMT stumps making up 46% (n=125) of the assemblage. All of the felled CMTs and stumps

recorded were made with steel axes. Not surprisingly, with only the odd exception of regrowth, 100% of the recorded CMTs in these categories were dead and only three individual trees were considered to be dead but in a good condition. The mean girth of the felled CMTs and stumps was 78cm, while the average stump height was 91.4cm.

Sugarbag CMTs

The sugarbag CMTs recorded during this study can be divided into two broad categories based upon the axe type used in their production; steel sugarbag CMTs (n=68) and stone sugarbag CMTs (n=15). The location of these CMTs included small concentrations of stone sugarbag CMTs along the Wenlock River, and near Chock-a-Block. However, the highest concentrations of stone scarred CMTs appear to be near the remains of Billycan Yards and Plutoville and in small pockets to the south the Wenlock River, particularly near Frog Hollow Creek.

The average number of sugarbag scars recorded per tree in this study was two. The number of sugarbag trees recorded during this study with more than one sugarbag scar is 43.4% (n=36) (Table 2). However, the majority (56.6%) of sugarbag CMTs recorded have only one sugarbag scar (Table 2).

The sugarbag CMTs with only a single scar are the most prominent, however, trees with 2-4 sugarbag scars were also well represented in the sample. The sugarbag trees with multiple scars are focused near the Wenlock River, in proximity to both Billycan Yards/Plutoville and the Wenlock Goldfields. The total number of individual sugarbag scars recorded during this study is 144, from a total of 83 trees (Table 3). However, it was not possible to record dimensions of all of these scars due to scar degradation (fire, rot and termite activity) or because scars were too high to accurately measure.

The apertures of 78 sugarbag CMT scars were recorded (Table 4). The dimensions of recorded sugarbag apertures vary widely. The mean aperture area of 221.1cm² indicates that these sugarbag CMTs are on average quite large when compared to previous studies in the region (Morrison and Shepard 2013).

Woomera Scars

CMTs with woomera scars show the removal of a long thin vertical section of heartwood (duramen) from the tree, sometimes on multiple occasions, leaving distinct scars (Figure 7). This type of scarring is associated with harvesting to create spear throwers (woomeras). Woomera CMTs were common within the Wenlock area, and were made with steel axes.

Mean woomera scar length is 85.6cm (Table 5) and is generally consistent with the woomera measured in ethnographic collections at the Peabody Museum, Harvard University and at the Cornell Collection, Cornell University (Tutchener 2018:213). Shorter scars may be the result of the production of a palette, a short wooden tool used to shape wax (Sutton 1994).

Results demonstrate that the production of woomera was a widespread practice, with concentrations of these CMTs sites near locations with pastoral remains. These results also indicate that there are significant concentrations of woomera CMTs with multiple scars (28.5% n=10) in the vicinity of Clayhole Yards.

Table 1. CMT types recorded in the study area.

CMT Type	Number	%
Stump	125	46.3
Sugarbag	83	30.7
Woomera	30	11.1
Felled CMTs (logs)	29	10.7
Axe Marks	2	0.7
Total	270	100

Table 2. Number of sugarbag scars per tree.

Number of Sugarbag Scars	Number of CMTs
1	47
2	15
3	7
4	10
5	1
6	2
7	1

Table 3. Sugarbag measurements for CMTs recorded during 2015/2016 field seasons. *=HAG is height of the scar above the ground.

Attribute	No. of Valid Cases	Min.	Max.	Mean
Total Scars	144			
Average Length (cm)	136	6	107	31
Average Width (cm)	136	4.5	31	12
Average Area (cm ²)	136	36	2033	445
Average HAG* (cm)	131	28	785	197
Steel Scars	112			
Average Length (cm)	112	11	107	33
Average Width (cm)	112	5	31	14
Average Area (cm ²)	112	74.25	2033	488
Average HAG (cm)	112	28	497	191
Stone Scars	32			
Average Length (cm)	32	6	85	24
Average Width (cm)	32	4.5	18	8
Average Area (cm ²)	32	36	1530	225
Average HAG (cm)	32	40	78.5	226

Table 4. Shows the total average CMT apertures measured.

	Valid Cases	Min.	Max.	Mean	Median
Average Length (cm)	78	2	106	24	19
Average Width (cm)	78	2	23	6.7	5
Average Area (cm ²)	78	4	1908	221.1	95

Table 5. Woomera CMT measurements.

	Valid Cases	Min.	Max.	Mean
Average Length (cm)	35	12	180	85.6
Average Width (cm)	35	8	76	22.5
Average Area (cm ²)	35	120	9900	2084
Average HAG (cm)	32	12	114	53



Figure 7. CMT with multiple steel axe woomera scars near Clayhole Creek.

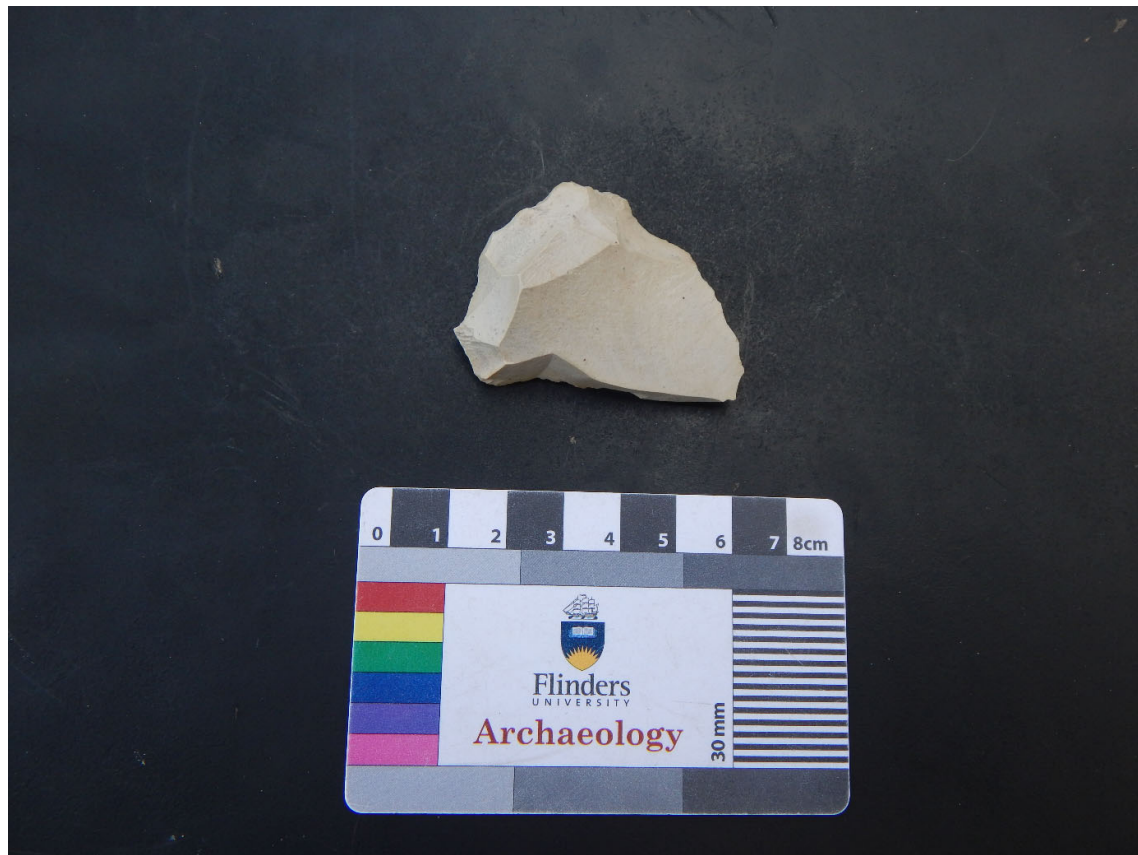


Figure 8. Silcrete flake with retouch from the bank of Weiss' Creek.

Other Site Types

Lithic Material

A total of 14 lithic sites have been located (excluding those associated with rockshelters as described above) thus representing only a small proportion of identified sites (Figure 8, Table 6). This is due to three contributing factors. Firstly, the dynamic nature of the landscape (particularly due to wet season rainfall) means that objects on the surface are prone to movement and are potentially easily buried. Secondly, the focus of surveys near historic mining areas was where substantial historic disturbance has occurred, thus potentially destroying or obscuring lithic sites. Finally, heavy grass cover meant that ground surface visibility was at times very limited, and on average around 25%, thus further constraining the identification of artefacts. For these reasons we assume the number of sites recorded is an under-representation of the number of lithic sites likely to occur across the landscape. No formal tool types were identified. The lithic material located is summarised in Table 6.

Pastoral Sites

A number of former cattle yards were located during this study and varied both in size and condition. Billycan Yards comprises two discrete wooden yards, Billycan Yards 1 and 2, and is located near Plutoville on the (northern) bank of the Wenlock River. Access to water is crucial to the keeping of stock in northern Australia, and these yards are located in a prime place to take advantage of this, as the distance to the Wenlock River from Billycan Yard 1 is 66m, while the distance to the closest lagoon is 177m. Distance to the Wenlock River from Billycan Yard 2 is 102m, where the bank is currently fairly flat and during low river flows (e.g. during the late dry season) could operate as a crossing. The distance to the nearest lagoon (although not full of water year-round) is 246m. A second pair of yards, Clayhole Yards 1 and 2, were also recorded. Clayhole Yard 1 is a short distance to Clayhole Creek (205m), however, in this section, it is quite steep and during the dry season does not always hold water. However, at a distance of 390m, there is a lagoon, which provides year-round water and a flat approach for cattle. Similarly, Clayhole Yard 2 is located at a distance of 45m to Clayhole Creek. However, when this site was recorded (August) there was no water, with the nearest water being 400m away.

Billycan Yards 1 and 2 both consist of circular arrangements of wooden posts, with rails missing. Billycan Yard 1 is comprised of seven posts (mean girth 62.3cm and mean height 161.5cm), all made from Cooktown ironwood. The majority of the posts recorded (6 of 7) had four horizontal sections removed, presumably to attach horizontal wooden rails, while some were made with only a saw, but others were made with both saw and axe (Figure 9). There is evidence of wire loops and bored holes through the posts. The highest horizontal incision on each post also has a bored hole that appears to have gone over a top horizontal rail of wood (Figure 10).

Billycan Yard 2 is larger than Billycan Yard 1, and for the most part is better preserved apart from the fact that the southern section of the yards nearest the river appears to be missing. This yard is comprised of 13 posts (mean girth of 50cm and mean height of 155cm). Two of the posts recorded had fallen to the ground. There was no associated cultural material located on the surface during this survey and

construction techniques were very similar to Billycan Yard 1. The posts at Billycan Yard 2 were created using both saw and steel axes (see Figure 11) and all had four horizontal marks; the highest mark on each post included a bored hole and some extant wire to attach a top rail.

The Clayhole Yards included a sizeable and well-preserved stockyard near the present-day road (Clayhole Yard 1), and a smaller badly preserved stockyard set further back (to the northeast) along Clayhole Creek (Clayhole Yard 2). Clayhole Yard 1 is the largest yard recorded to date, with 36 extant posts with larger mean sizes than at other recorded yards in the area (mean girth 64.8cm and mean height 167.1cm), together with a pair of tall posts (286cm), likely to be the entrance (Figure 12). The yards have a row of posts, or a corral, leading from the main gate to near the present-day road in a westerly direction. No plan was made of this site due to time constraints. The construction technology used at Clayhole Yard 1 is different to that of Billycan Yards 1 and 2. These posts had no notch at the top to attach a top rail, and each post has only been cut enough to support the wire for each horizontal post with a V-shaped axe incision (see Figure 13). The horizontal rails are kept in place with a wire placed under significant tension using a Cobb & Co knot (Figure 14).

The final set of former cattle yards is that of Clayhole Yard 2, which is smaller than those at Clayhole Yard 1, with only 14 posts (mean girth 42.7cm and mean height 157cm). The posts at Clayhole Yard 2 differ from Billycan Yards 1 and 2 as they do not have notching on the side to support horizontal rails. Instead, they typically have three holes drilled through the whole post (Figure 15), presumably to support horizontal rails with wire (which are still extant and include Cobb & Co knots in some cases). These yards show no indication of the use of a top rail. This yard also showed indications of portions of a corral, which faced to the east. These yards are in a poorly preserved condition, and several posts are severely damaged by fire events and termite activity.

Native Mounted Police Camp

A stone foundation or structure (Figure 16) was located and recorded near Clayhole Yard 1, that corresponds to historical material (Della-Sale 2013:56; Jack 1921:Map C). This feature is likely to be the remains of a Native Mounted Police camp. The site consists of three foundations/wall bases, two of which are parallel (the longest walls) and have a precise north-south orientation, whereas the shorter wall is oriented exactly east-west. The structure was built from flat river stones, which occur in abundance within the nearby section of Clayhole Creek (approximately 50m to the north).

The remains of a wooden structure were located approximately 25m to the east of the stone wall/foundations. In total, this structure measured 3.2m in length by 2.4m in width. It consists of 4 or 5 posts that may have supported a roof, and a floor that was partially covered with flat river rocks. The posts are Cooktown ironwood and quite thin (see Table 7) when compared to those used in nearby Clayhole Yards 1; fencing wire was still in evidence through a borehole in the top of one post. The structure had suffered severe damage from a fire event and is in close proximity to an abandoned car. With the current information, the date of this wooden structure is indeterminate. There is associated glass material, some of which dates to earlier than 1910, indicating that the area has high integrity and significant potential for future research.



Figure 9. Billycan Yard 1, showing saw marks at the bottom of the fencing post and axe marks at the top.



Figure 10. Billycan Yard 1, showing three horizontal saw marks and a bored hole for attaching a top rail at the top of the post.



Figure 11. Billycan Yard 2, showing both saw (at the bottom of the incision) and axe marks (at the top).



Figure 12. Clayhole Yard 1, showing probably entry post.



Figure 13. Typical post at Clayhole Yard 1, showing horizontal mark is only wide enough to support the wire for the horizontal rails.



Figure 14. Cobb and Co knot at Clayhole Yard 1.



Figure 15. Post at Clayhole Yard 2.



Figure 16. Stone wall/foundation near Clayhole Yard 1, that is likely to be the remains of a Native Mounted Police camp.

Table 6. Summary of lithic material identified during the 2015/2016 field seasons.

Site Number	Type of Site/Artefact	No. of Artefacts	Raw Material	Location in Relation to Erosion/General	Distance to Year-Round Water (m)
2129	Lithic scatter	50+	Quartz, silcrete		0-15
2137	Lithic scatter	3	Quartz	Eroding from river bank	0-15
2138	Lithic scatter	10	Quartz	Eroding from cliff face	0-15
2139	Lithic scatter	7	Quartz, silcrete	Eroding/deflating	0-15
2140	Lithic scatter	20+	Quartz	Eroding/deflating	0-15
2141	Lithic scatter	2	Quartz		0-15
2143	Lithic scatter	3	Quartz	Eroding/deflating	0-15
2152	Lithic scatter	2	Metamorphic	Ridgeline	500
2121	Flake	1	Quartz		0-15
2136	Lateral broken flake	1	Quartz		0-15
2142	Secondary flake	1	Quartz	Eroding/deflating	0-15
2146	Retouched flake	1	Silcrete	Eroding from river bank	0-15
2239	Flake	1	Glass	Rockshelter	500
1049	Flake	1	Quartz	Near track	0-15

Table 7. Post dimensions of wooden structure near Clayhole Yards 1.

Post Number	Orientation	Height (cm)	Circumference (cm)
1	NW	179	42
2	NE	168	40
3	SE	162	40
4	SW	179	54

Discussion

This preliminary investigation indicates that despite the absence of previous studies, there is vast array of archaeological materials located within the study area. Consequently, there is substantial potential for further archaeological investigations spanning the pre-colonial and colonial periods.

Rock Art

The rock art recorded is associated with a northern extension of the Gilbert River Formation, which is the geological formation on which the majority of rock art within the Laura region occurs. While only four rock art sites have been recorded to date, custodians and Chuulangun staff note that other sites occur elsewhere in the study area. Three of the recorded sites (Chuula 1, Wa'tanchi 1 and 2) have good excavation potential and should enable the establishment of a preliminary occupation chronology for the northern highlands region. An array of both pigment art and engravings were noted, though weathering has significantly impacted on many of these. There is limited evidence of colonial-era motifs, with one set of initials identified, although given the widespread production of such motifs, including those related to the Native Mounted Police and sorcery in the Laura region (e.g. Cole 2010) other examples in the study area are highly probable. The presence of a number of marine motifs (multiple sea turtles at Chuula 2, along with a possible stingray and jellyfish at Wa'tanchi 1) could be an indicator of social interaction between Kuuku I'yu people of the highlands and other groups on the coastal lowlands, most likely the east coast which is less than 50km away.

Lithic Material

The majority of the lithic material located was clustered along the banks of Weiss Creek, a secondary tributary of the Wenlock River, as well as within rockshelters. It is also possible that any sites containing lithic material located along the Wenlock River may have been altered significantly by flood waters and vegetation over time. Half of the lithic material was located in deflated or eroded areas; this may be due to the movement of these objects due to the considerable hydroturbation within the study area exposing artefacts or conversely moving them downslope. These results are also somewhat biased as although there was pedestrian survey coverage away from water sources, rivers, creeks and ridgelines were the primary focus of this investigation. The general pattern of lithic concentrations indicates that they were all located within 500m of year-round water sources. Of further interest is the proximity of these sites to either ephemeral creeks or permanent water sources at fewer than 20m, indicating that these sites were likely seasonal. This spatial relationship between lithic material and water in the Wenlock area indicates that the larger lithic concentrations along Weiss Creek may be evidence of occupation sites, which corresponds with the knowledge of local custodians (David Claudie, pers. comm., August 2015). The lithic resources within the study area suggest that there are likely considerable assemblages yet to be located. However, these preliminary findings indicate that any potential lithic assemblages are likely to be located in rockshelters, near secondary waterways and may only exist in substantial numbers within subsurface deposits.

Culturally Modified Trees

The CMTs that dot the landscape of the study area are indicative of how it has been utilised in order to exploit economic resources. Sugarbag CMTs show the harvesting of a high-calorie food product and are suggestive of an intensification of this practice through wider apertures, multiple scars and the felling of trees. Woomera scars result from wood being removed to create a woomera, the function of which was to increase the throwing range of spears. These practices continued from the pre-colonial era into the colonial period, which is demonstrated through the continued production of these site types with the introduction of steel axes to the Aboriginal toolkit.

Morrison and Shepard (2013) argued that as the colonial period progressed there was an intensification of the harvesting of sugarbag, and that this led to larger aperture scars in CMTs to extract more honey and later to the felling of sugarbag CMTs to access even more honey. The mean aperture size (145cm²) for sugarbag CMTs recorded in the Weipa region (Morrison and Shepard 2013) is based on a larger dataset (n=333) than the present study (n=78). However, the mean aperture size for the current study was significantly larger than the results on the western coast of the CYP (221cm²). Two of the pastoral centres, Billycan Yards 1 and 2, have numerous sugarbag CMTs with high average aperture sizes in close proximity. This pattern is partially indicative of the density of CMTs near pastoral sites. These results also demonstrate that there are concentrations of sugarbag CMTs near the Wenlock River and Nichol Creek, and concentrations of sugarbag CMTs with numerous multiple scars to the south of the Wenlock River and to the east of the major mining centre. There are several sugarbag CMTs in the area on the opposite side of the Wenlock that historical sources indicate was occupied by Aboriginal people during the colonial period (Fisher 1998). Ethnographic sources in the Wenlock area discuss the harvesting of sugarbag in a number of instances. Aboriginal people referred to the road to Lockhart River, during the colonial era as 'sugarbag road' (Smith 2016). This road was first constructed in the 1920s to carry machinery and supplies to the Wenlock Goldfield making travel in the area with or without a vehicle much quicker and it is likely that this enabled Aboriginal people to travel from the coast to the Wenlock area with greater ease than before and may be related to a concentration of sugarbag CMTs in the Wenlock area. The introduction of this transport route is likely to have affected the harvesting pattern of sugarbag in the Wenlock area, resulting in a different relationship between the aperture of sugarbag CMTs and the intensification of foraging through time.

There is a significant range in the size of the dry face scars of the stone and steel sugarbag CMTs recorded in the study area. The stone-cut sugarbag CMTs have an average length of 24.2cm, an average width of 8.5cm and an average area of 224.7cm² and are significantly smaller than the steel-cut sugarbag CMTs with an average length of 33.3cm, an average width of 14cm and an average area of 487.6cm². With over double the average area of stone cut sugarbag CMTs, the steel cut sugarbag CMTs indicate a significant increase in the harvesting of this resource material during the colonial era, a finding consistent with other work in the region (Morrison and Shepard 2013).

As CMTs are an abundant site type, and are continually at risk of further degradation, additional surveys recording this

site type are needed and may show further variations in the use of this resource. Further investigation concentrating on the areas to the south of the Wenlock River and to the east of the Wenlock Goldfields are likely to find further evidence of colonial-era Aboriginal occupation. The results of the woomera CMTs recorded during this study demonstrates that there was continued production of this site type into the colonial era by Aboriginal people. This also illustrates that there was also a continuing requirement for Aboriginal people to hunt for food. The production of shorter scars on the sides of trees may be related to the harvesting of palettes, again, further research is required. Further research into CMT production in the study area can significantly add to our knowledge of Aboriginal and European settler interaction during the colonial era and illustrate the persistence of classical lifeways into the colonial period.

Cattle Yards

The two sets of stock yards identified at Billycan Yards are both located on the northern bank of the Wenlock River and are in relative proximity to the Wenlock and Plutoville Goldfields and the present-day road. The construction of each yard makes similar use of a horizontal notch in the vertical poles supplemented with wire to attach the horizontal rails. Owing to the significant difference in the preservation of the two yards, and the wider pole girths at Billycan Yards 2, these yards may represent two different stages of pastoral activity in the area.

Two sets of cattle yards were found near Clayhole Creek. Clayhole Yard 1 is very prominent and relatively well preserved, while Clayhole Yard 2 is much smaller and in a poorly preserved condition and set back from the present-day main road to the northeast of Clayhole Yard 1. The construction technique used in both yards differs substantially: Clayhole Yard 2 uses wire to supplement horizontal grooves cut in each wooden post to hold horizontal posts in place (this is similar to Billycan Yards 1 and 2). However, Clayhole Yard 1 is the best-preserved yard in the area and is also constructed of much larger timbers. Its construction uses wire set into a 'V'-shaped groove cut into the vertical posts to support the horizontal posts which are held taut with wire often in the form of a Cobb & Co knot. This distinct difference in techniques is tentatively considered to be reflective of a change in the construction of stock yards in the area over time, with Clayhole Yard 1 being much more recent than Clayhole Yard 2.

No documentary evidence relating to these yards was located during this study. The dating of this type of pastoral site is difficult, however, utilising evidence from oral history records (Boyd and Lowenstein 1971), combined with maps of pastoral runs of the study area, a likely date range has been established. Of the stock yards recorded within this study, only the yards at Clayhole had corrals still in evidence. Corrals are designed to assist with herding stock into the yards by providing a kind of chute into the main gate. Corrals point in the direction from which the cattle were mustered from, and it can be assumed that Clayhole Yard 1 held stock that had been mustered from the northwest, while Clayhole Yard 2 held stock that had been mustered from the northeast. This orientation may make Clayhole Yard 2 contemporaneous with Billycan Yards 1 and 2 and likely dates from the period 1904/5 onwards and may be associated with York Downs Station. Clayhole Yard 1 likely dates from a later period, due

to its good preservation, corral orientation and different construction techniques. As each of these cattle yard locations contain two sets of yards, one each in a state of poor preservation, it is likely that these two locations were used to muster cattle over an extended period of time.

Native Mounted Police Camp

The Native Mounted Police in the Wenlock area had a dramatic impact on the lives of the Kuuku I'yu. The aggressive 'dispersals' of Kaanju people in the late 1880s led to major demographic shifts in the region (Morrison et al 2019; Tutchenner 2018). The later Police presence in the Wenlock area involved numerous violent removals of Aboriginal people to Palm Island, Yarrabah, Lockhart and other missions in Queensland in the 1930s and continued until the 1950s (Copland 2005).

The historical record (Jack 1921:714) indicates that John Dickie's 1910 party found the ruins of the 1887 Native Mounted Police camp. This was located about six miles from Mein near the head of Clayhole Creek. Jack's (1921: Map C) places the 1887 Native Mounted Police camp near Clayhole Creek and when this map is georeferenced, the camp is located on the western side of Clayhole Creek near the foundation/walls located in this study. The use of stone in the foundations and the north-south and east-west placement of the walls is consistent with a paramilitary group like the Native Mounted Police and much less likely to be associated with later stockmen camping in the area. This feature is consequently tentatively dated to the 1880s–1890s, however further research, including excavation may provide additional details.

Conclusions

These preliminary results clearly indicate that the highlands of the CYP have substantial research potential; however, a greater understanding of both the physical and cultural landscapes is required through further research. It is crucial that any future research is conducted in collaboration with the Kuuku I'yu according to the objectives of the Kuuku I'yu Custodians.

This results-oriented paper has outlined the archaeological results of formal archaeological investigations to date within the Pianamu cultural landscape. These results support the Kuuku I'yu peoples' aim of the identification, significance assessment and management of Indigenous heritage places throughout the Kaanju Ngaachi Indigenous Protected Area (IPA). There is significant further archaeological work to be done in the study area that will assist in the continuing the management of the IPA by Chuulangun on behalf of Kuuku I'yu Custodians.

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