Based on previous archaeological investigations, the following predictive model was developed for the study area:

- occupation sites are the predominant site types to be encountered;
- reliable watercourses, gentle slopes, hilltops and ridges are the likely landforms to contain sites;
- artefact densities are likely to be greater within 50m of a reliable watercourse and comparatively high on elevated, level ground over 100m from water;
- owing to the number of watercourses within the study area, there is moderate potential for sites, particularly low density artefact scatters, within 50m of these watercourses, with isolated finds and reduced artefact densities possible further from the watercourses;
- mid to late Holocene sites are likely, with artefacts likely to be made of mudstone or silcrete, with smaller amounts of quartz, chert, petrified wood and other raw materials;
- artefact types are likely to be debitage from flaking, flakes, broken flakes and a few cores, with smaller amounts of retouched flakes, asymmetrical and symmetrical backed blades, and
- sites are likely to be disturbed.

The study area was divided into three survey units, based on landform elements and the survey focused on areas of high ground visibility and exposures. Visibility across the study area was varied, ranging from 10%-50%. The effective coverage was assessed as 8%. Three isolated finds were identified (Refer to Table 5.11).

Table 5.11 Summary of Sites (MCH 2009b)

Site	Site type	landform	Distance to water	Stream Order	Artefacts	Disturbance	Potential for subsurface
ERB1	isolated	lower slope	200m	2nd	1	excavation, sheet wash	low
ERB2	isolated	mid slope	0-50m	1st	1	excavation, sheet wash	low
ERB3	isolated	mid slope	0-50m	1st	1	excavation, sheet wash	low

The three artefacts identified were a mudstone flake (ERB1), silcrete flaked piece (ERB2) and a mudstone core (ERB3).

Due to the disturbance of all three sites, they were all assessed as having low potential for subsurface artefacts and due to their representativeness, as being of low archaeological significance. No further archaeological investigation was recommended.

5.4 LOCAL & REGIONAL CHARACTER OF ABORIGINAL LAND USE & ITS MATERIAL TRACES

The following is a summary and discussion of previous investigations detailed in *Section 5.4*. Of the 99 sites recorded within a 5 kilometre radius of the study area, 91 sites contained sufficient information in associated reports to be able to determine their distance from water, the landform on which they were located and contents (see *Tables 5.12* to *5.15*). It must be remembered, however, that there are various factors which will have skewed the results. These include but are not limited to:

- the landform on which a site area is observed is not necessarily its origin, for example, artefacts which would have originated on a crest may be located eroding down the slope;
- biases due to differential sampling of landforms based on decisions made by archaeologists and as a result of restrictions due to the locations of proposed development areas, levels of exposure on different landforms, and the variable level of reporting by archaeologists will affect the count of sites on each landform type. For example, the large percentage of sites found along creek lines may be, at least partially, representative of how many cultural heritage surveys focused on these landforms, and
- artefact counts can be skewed due to factors such as differing levels of fragmentation of material and levels of ground surface visibility. A very large number of sites/ artefacts were located on exposures with either no or very few artefacts visible away from the exposures.

Therefore these results provide merely an indication of what may be expected in terms of site location and distribution. Based on previous work it is also clear that the majority of sites contain stone artefacts. This is to be expected due to stone's high preservation qualities.

Table 5.12 Site size in relation to landforms and proximity to water

Site Content: No. of artefacts	Site within 50m of water					Sites 50 to 100m from water				Site more than 100m from water			Total No. of Sites
	crests	slopes	creeks	drainage	Sub-total	crests	slopes	drainage	Sub-total	slopes	drainage	Sub-total	
≤10	4	18	20	1	43	2	6	1	9	17	2	19	71
11 to 100	4	0	6	2	12	0	1	0	1	3	1	4	17
>100	0	1	1	0	2	0	1	0	1	0	0	0	3
Total	8	19	27	3	57	2	8	1	11	20	3	23	91
% of sites within distance from water	14%	33%	47%	6%	100%	18.5%	72%	9.5%	100%	87%	13%	100%	100%
% of total sites	8.8%	20.8%	29.7%	3.3%	62.6%	2.2%	8.8%	1.1%	12.1%	22%	3.3%	25.3%	100%

Artefact scatters and isolated artefact finds have been classified into 'small' (ten or fewer artefacts), 'medium' (eleven to 100 artefacts) and 'large' (more than 100 artefacts). Please note that these divisions are entirely arbitrary. Slopes include lower, mid and upper and crests include spur crest and ridge crest.

By far, the highest percentage of sites (62.6%) was located within 50 metres of a water source. However, rather than the numbers of sites decreasing with distance from water, 25.3% of sites were located more than 100 metres from water while only 12.1% were between 50 and 100 metres from a watercourse.

Artefact densities of sites also appear to have a bimodal pattern (Refer to *Table 5.13*). The highest density of artefacts is located within the 0-50 metres of water with 43 sites including fewer than 10 artefacts, 12 sites including 11-100 artefacts and 2 sites containing over 100 artefacts. In the 50-100 metres from water category, 9 sites include less than 10 artefact, 1 site includes 11-100 artefacts and 1 includes over 100 artefacts. In the more than 100 from water category, 19 sites include less than 10 artefacts, 4 include 11-100 artefacts and no sites with more than 100 artefacts.

Table 5.13 Site size in relation proximity to water

Distance from water	Artefact numbers		
	<10	11-100	100+
50	43	12	2
50-100	9	1	1
100+	19	4	0

Taking into consideration sites within in all distance to water categories, the majority of small and medium artefact scatters are located within 50 metres of a water source. Based on previous reports the likelihood of finding sites of any size increases with proximity to water and the likelihood of finding large artefact scatters also increases markedly with proximity to water.

Table 5.14 Site types in relation to landforms and proximity to

Site Type	Sites within 50m of water				Sites 50 - 100m from water			Sites > 100m from water		Total No. of Sites
	crests	slopes	creeks	drainage	crests	slopes	drainage	slopes	drainage	
Artefact scatter	2	13	6	2	1	5	0	14	1	44
Isolated	2	9	3	1	1	3	1	6	2	28
Artefact scatter/ PAD	0	0	7	0	0	0	0	0	0	7
PAD	0	1	11	0	0	0	0	0	0	12
Total	4	23	27	3	2	8	1	20	3	91

Of the main sites types (artefact scatters and isolated finds) in relation to distance from water and landforms, as indicated in *Table 5.14*, within the 50 metres form water category, artefact scatters are mainly located on slopes and creeks, followed by creeks drainage lines and isolated artefact sites have a similar pattern. Within the 50-100 metres form water category, artefact scatters are mainly located on slopes and 1 site on a crest while isolated finds have 3 sites on slopes and one on both a crest and drainage. Finally, within the 100m+ metres form water category, artefact scatters are mainly located slopes. The data suggests that slopes in the area were the preferred location, however, this does not account for vertical movement of artefacts or sites being moved from flooding, flowing creeks etc. The remainder of sites include PADs and artefact scatter/PAD which are not clearly defined and as such not included in the above calculations.

Variations between archaeologists' classifications of raw material types (for example tuff and indurated mudstone) will have an effect on the results of this count. Raw material type was not indicated in most reports and as such general comments are made. Again, this information is presented merely as an indication of what may be expected.

Mudstone, silcrete and tuff are by far the most common raw material types represented at sites in the region. Quartz and chert are the next most frequently in artefact assemblages followed by volcanic materials, porphyry and petrified wood. Siltstone, rhyolite and porcellanite are relatively rare. However it must be remembered that raw materials may have been incorrectly classified, and not all site descriptions provided in reports and on site cards contained detailed information.

Due to differences in recording techniques it is difficult to determine how many of each artefact type is represented across the region though types include flakes, broken flakes, retouched flakes, multi-platform cores, single platform cores, bipolar cores, flaked pieces, 'waste' pieces, 'chips', debitage, 'geometric microliths', 'backed blades', 'bondi points', 'scrapers', 'eloueras', 'burrins', 'blades', 'hatchets', 'unifacial choppers', 'bifacial choppers', 'pebble tools', a 'slice', edge-ground axes, anvils, hammer stones and heat. Due to variations in both the amount of data that is included in reports, and the terms different archaeologists used to describe artefact types, it is not practicable to provide a count of the different artefact types. However, it is evident that flakes, broken flakes and flaked pieces are the most common artefact types recorded.

The vast majority of artefactual material in the region was observed on exposures with good to excellent ground surface visibility. The likelihood of finding artefacts surrounding these exposures is reduced due to poor visibility. The site area is often given as the area of exposure. Hence, it is inappropriate to attempt to draw any conclusions regarding site extent based on current information.

Based on information gained from previous studies within a five to seven kilometre radius of our study area, it can be expected that:

- the likelihood of locating sites increases with proximity to water;
- the likelihood of finding large sites increases markedly with proximity to water;
- the majority of sites more than 50 metres from a watercourse may contain less than 10 visible artefacts;
- large artefact scatters can occur more than 50 metres from a watercourse but infrequently;
- a variety of raw materials will be represented though the majority of sites will be predominated by mudstone and silcrete;
- a variety of artefact types will be located though the majority will be flakes, flaked pieces and debitage;
- grinding grooves will be located along or near water sources;
- the likelihood of finding scarred trees is dependent on the level of clearing in an area' and
- the majority of sites will be subject to disturbances including human and natural.

These findings are consistent with models developed for the area.

5.5 *PREDICTIVE MODEL FOR THE STUDY AREA*

Due to issues surrounding ground surface visibility and the fact that the distribution of surface archaeological material does not necessarily reflect that of sub-surface deposits, it is essential to establish a predictive model.

Previous archaeological studies undertaken throughout the region, the DECCW AHIMS register and the environmental context provide a good indication of site types and site patterning in the area. This research has shown that occupation sites (artefact scatters and isolated finds) are the most frequently recorded site type and are commonly located along or adjacent to watercourses, and on relatively flat to gently sloping topography in close proximity to reliable water. Sites with higher artefact densities are similarly concentrated within fifty metres of watercourses.

Within the local area, previous assessments within a similar environmental context indicate that, within a well-watered context, there is high potential for archaeological material to be present on level, typically well-elevated landforms that provide ready access to low-lying waterlogged areas and the associated resources.

Within the study area, it is possible that isolated finds and small density artefacts scatters maybe located on the crest, slopes and drainage lines. However, sites are more likely to be located within 50 metres of reliable

water sources such as the Hunter River that is located approximately 4 kilometres to the north (Refer to *Figure 5.3*).

The refinement of this predictive model will be dependent upon an investigation of the range of landforms and the occurrence of modern disturbances within the study area.

5.6 *ARCHAEOLOGICAL POTENTIAL IN THE STUDY AREA*

Based on archaeological sites registered in the region and the results of past archaeological studies, two sites types are likely to occur throughout the study area:

- Open artefact scatters

Also described as open campsites, artefact scatters and open sites, these deposits include archaeological remains such as stone artefacts, shell, and sometimes hearths. These sites are usually identified as surface scatters of artefacts in areas where ground surface visibility is increased due to lack of vegetation. Erosion, agricultural activities (such as ploughing) and access ways can also expose surface campsites.

Stone artefacts are the most common archaeological remains. They are the most numerous of all the relics produced by Aboriginal occupation, and the least susceptible to post-depositional destruction and decay. Given the high number of artefact scatters recorded in the surrounding area, it can be assumed that both artefact scatters and isolated finds are present, either on the surface in erosion features, or will be unearthed when disturbing subsurface deposits.

- Isolated finds

Isolated artefacts are usually identified in areas where ground surface visibility is increased due to lack of vegetation. Erosion, agricultural activities (such as ploughing) and access ways can also expose surface artefacts.

5.7 *HERITAGE REGISTER LISTINGS*

the State Heritage Register, the Australian Heritage Database (includes data from the World Heritage List UNESCO, National Heritage List, Commonwealth Heritage List, Register of the National Estate) and the Singleton Local Environmental Plan. However, not all indigenous places are listed, and the Heritage Commission is consulting with Traditional Owners to gradually include indigenous information. There are no indigenous heritage items listed on the Singleton Local Environment Plan.

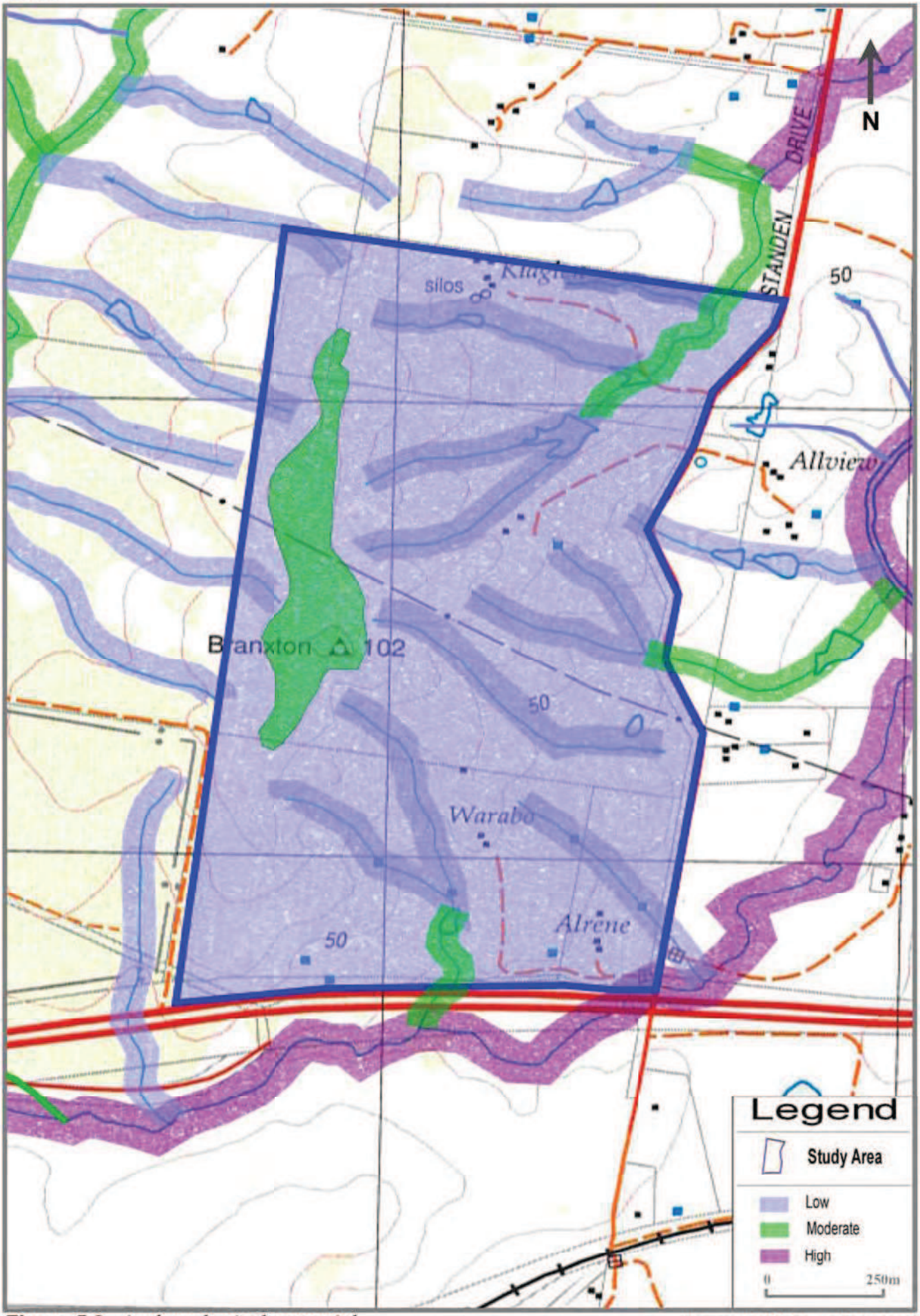


Figure 5.3 Archaeological potential

Source: 1:25 000 Topo Series: Greta

5.8 MODELS OF PAST ABORIGINAL LAND USE

The main aim of this project is to attempt to define both the nature and extent of occupation across the area. As a result, the nature of the analysis will focus on both the landform units and sites. The purpose of this strategy is to highlight any variations between sites and associated assemblages, landforms and resources across the area treating assemblages as a continuous scatter of cultural material across the landscape.

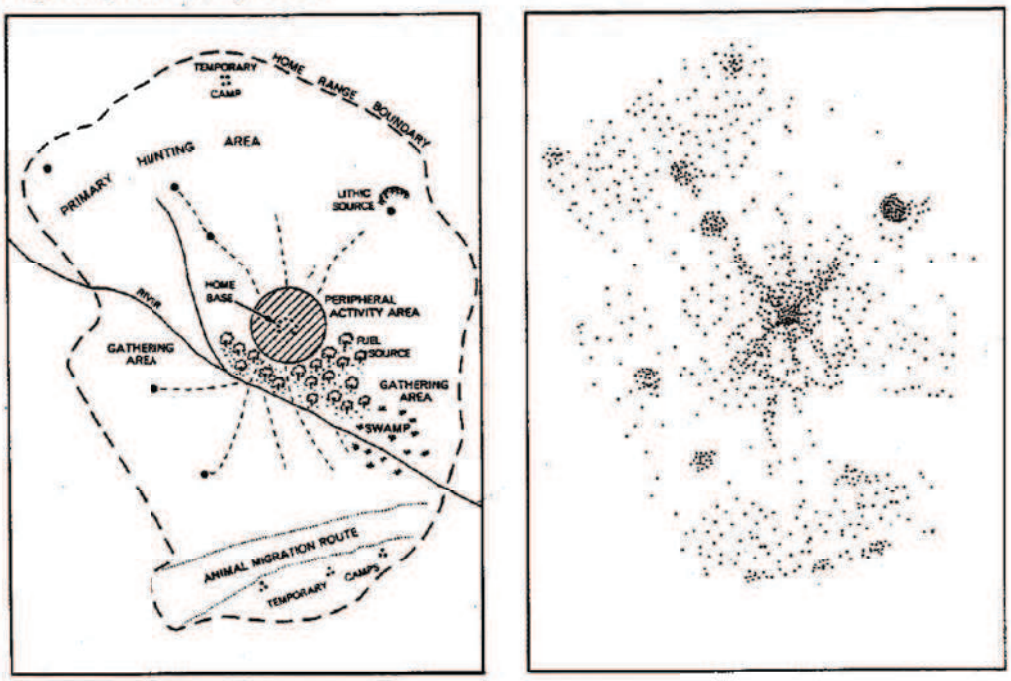
In doing this, it is possible to identify variation across the landscape, landforms and assemblages that correspond with variation in the general patterns of landscape use and occupation. Thus the nature of activities and occupation can be identified through the analysis of stone artefact distributions across a landscape.

A general model of forager settlement patterning in the archaeological record has been established by Foley (1981). This model distinguishes the residential 'home base' site with peripheral 'activity locations'. Basically, the home base is the focus of attention and many activities and the activity locations are situated away from the home base and are the focus of specific activities (such as tool manufacturing). This pattern is illustrated in *Figure 5.4*.

Home base sites generally occur in areas with good access to a wide range of resources (reliable water, raw materials etc). The degree of environmental reliability, such as reliable water and subsistence resources, may influence the rate of return to sites and hence the complexity of evidence. Home base sites generally show a greater diversity of artefacts and raw material types (which represent a greater array of activities performed at the site and immediate area).

Activity locations occur within the foraging radius of a home base camp (approximately 10 km); (Renfrew and Bahn 1991). Based on the premise that these sites served as a focus of a specific activity, they will show a low diversity in artefacts and are not likely to contain features reflecting a base camp (such as hearths). However, it is also possible that the location of certain activities cannot be predicted or identified, adding to the increased dispersal of cultural material across the landscape. If people were opting to carry stone tools during hunting and gathering journeys throughout the area rather than manufacturing tools at task locations, an increased number of used tools should be recovered from low density and dispersed assemblages.

Figure 5.4 ***Foley's model (left) and its manifestation in the archaeological record (right), (from Foley 1981).***



5.8.1 *Model of occupation for the Hunter Valley*

Work in the Hunter Valley has aimed to understand the nature of Aboriginal occupation and determine the nature of land use. This theme often aims to identify and explain archaeological patterning in site type, content and distribution. General theories have been developed outlining the relationship between land use patterns and the resulting archaeological evidence. A number of models developed for the Hunter Valley have been reviewed (Koettig 1994; Dean-Jones and Mitchell 1993; Rich 1995; Kuskie and Kamminga 2000) and the most commonly accepted model is summarised below.

Kuskie and Kamminga (2000) established a general model of occupation strategies based primarily upon ethnographic research. Used as a starting point, it makes a general set of predictions for the Hunter that is consistent with other studies (e.g. Nelson 1991, Thomas 1983). The model distinguishes between short-term or extended long-term occupation and makes some predictions about the likely location of different foraging and settlement activities. Combining this information with a general review of assemblage contents from a sample of excavated sites within the Hunter Valley, a baseline of settlement activities may be determined (Barton 2001).

The model provides a number of archaeological expectations that may be tested. For example, the presence of features requiring a considerable labour investment such as stone-lined ovens or heat-treatment pits are likely to occur at places where occupation occurred for extended periods of time. The presence of grindstones is also a reliable indicator of low mobility and extended occupation. Seed grinding requires a large investment of time and effort (Cane 1989). In most ethnographic examples, seed grinding is an

activity that takes place over an entire day to provide adequate energetic returns (Cane 1989; Edwards and O'Connell 1995).

Where group mobility was high and campsites frequently shifted throughout the landscape, artefact assemblages are not expected to contain elements such as grindstones, heat-treatment pits, ovens and the diversity of implements frequently discarded at places of extended residential occupation. It may also have been the case that the location of particular activities could not be predicted by tool users, adding to the increased low-density scattering of artefacts over the landscape. Also, if individuals were opting to carry a number of stone tools during hunting and gathering activities and maintaining these tools rather than manufacturing new tools at each task location, the ratio of used tools to unworn flakes in these assemblages should be high. *Table 5.15* has been adapted from Kuskie and Kamminga (2000) with additional information in relation to sites and distance from water from MCH (2003c).

To identify the specific activity areas through analysis of the composition of patterning of lithic assemblages, is utilised. However, this is applied to excavated materials as they provide more realistic data due to the lesser degree of disturbances, removal and breakages.

Table 5.15 ***Site descriptions (Kuskie & Kamminga 2000)***

Occupation Pattern	Activity Location	Proximity to water	Proximity to food	Archaeological expectations
Transitory movement	All landscape zones	Not important	Not important	• Assemblages of low density & diversity • Evidence of tool maintenance & repair • Evidence for stone knapping
Hunting &/or gathering without camping	All landscape zones	Not important	Near food resources	• Assemblages of low density & diversity • Evidence of tool maintenance & repair • Evidence for stone knapping • High frequency of used tools
Camping by small groups	Associated with permanent & temporary water	Near (within 100m)	Near food resources	• Assemblages of moderate density & diversity • Evidence of tool maintenance & repair • Evidence for stone knapping & hearths
Nuclear family base camp	Level or gently undulating ground	Near reliable source (within 50m)	Near food resources	• Assemblages of high density &diversity • Evidence of tool maintenance & repair & casual knapping • Evidence for stone knapping • Heat treatment pits, stone lined ovens • grindstones
Community base camp	Level or gently undulating ground	Near reliable source (within 50m)	Near food resources	• Assemblages of high density &diversity • Evidence of tool maintenance & repair & casual knapping • Evidence for stone knapping • Heat treatment pits, stone lined ovens • Grindstones & ochre • Large area >100sqm with isolated camp sites

6 RESULTS

6.1 METHODOLOGY

The survey areas were surveyed on foot in transects at approximately 2 metres apart. The study area was surveyed with a focus on areas of high ground surface visibility and exposures (erosional features, drainage lines tracks, dams and cleared areas).

6.2 LANDFORMS

McDonald *et al* (1998) describes the categories of landform divisions that is a two layered division involving treating the landscape as a series of 'mosaics'. The mosaics are described as two distinct sizes: the larger categories are referred to as *landform patterns* and the smaller being *landform elements* within these patterns. Landform patterns are large-scale landscape units, and landform elements are the individual features contained within these broader landscape patterns. There are forty landform pattern units and over seventy landform elements. However, of all the landform element units, ten are morphological types. For archaeological investigations they divide the landscape into standardised elements that can be used for comparative purposes and predictive modelling. As outlined in *Chapter 3*, the study area includes a crest, slopes and drainage lines (*Figure 3.2*).

6.3 SURVEY UNITS

For ease of management, the study area was divided into 19 Survey Units (SUs) that were based on landforms (Refer to *Figures 6.1* and *6.2*). These are described in detail below.

Survey unit 1: Ridge

This survey unit includes the ridgeline that is located to the west of the study area and runs in a north – south direction. This unit has been previously cleared, used for agricultural purposes, grazing and has been recently cleared of trees in the south, west and north (when compared to the geotechnical aerial map in 2009). Currently there are numerous tracks through the unit and a power line easement running east west.

Erosion is severe with the B horizon exposed throughout with limited areas with the A horizon remaining. Vegetation is now predominantly pasture grass with a few trees to the north and south, all of which contributed to reduced ground surface visibility which was 40%. Exposures such as erosion and tracks were high at 90%. The overall effective coverage for this survey is 36% and there is very limited to no potential for in situ cultural materials due to past disturbances, erosion, exposed sandstone bedrock and what appears to be a thinner A horizon. There were no raw materials usually transported into the area and utilised for stone tool manufacture were present or visible.

MCH:

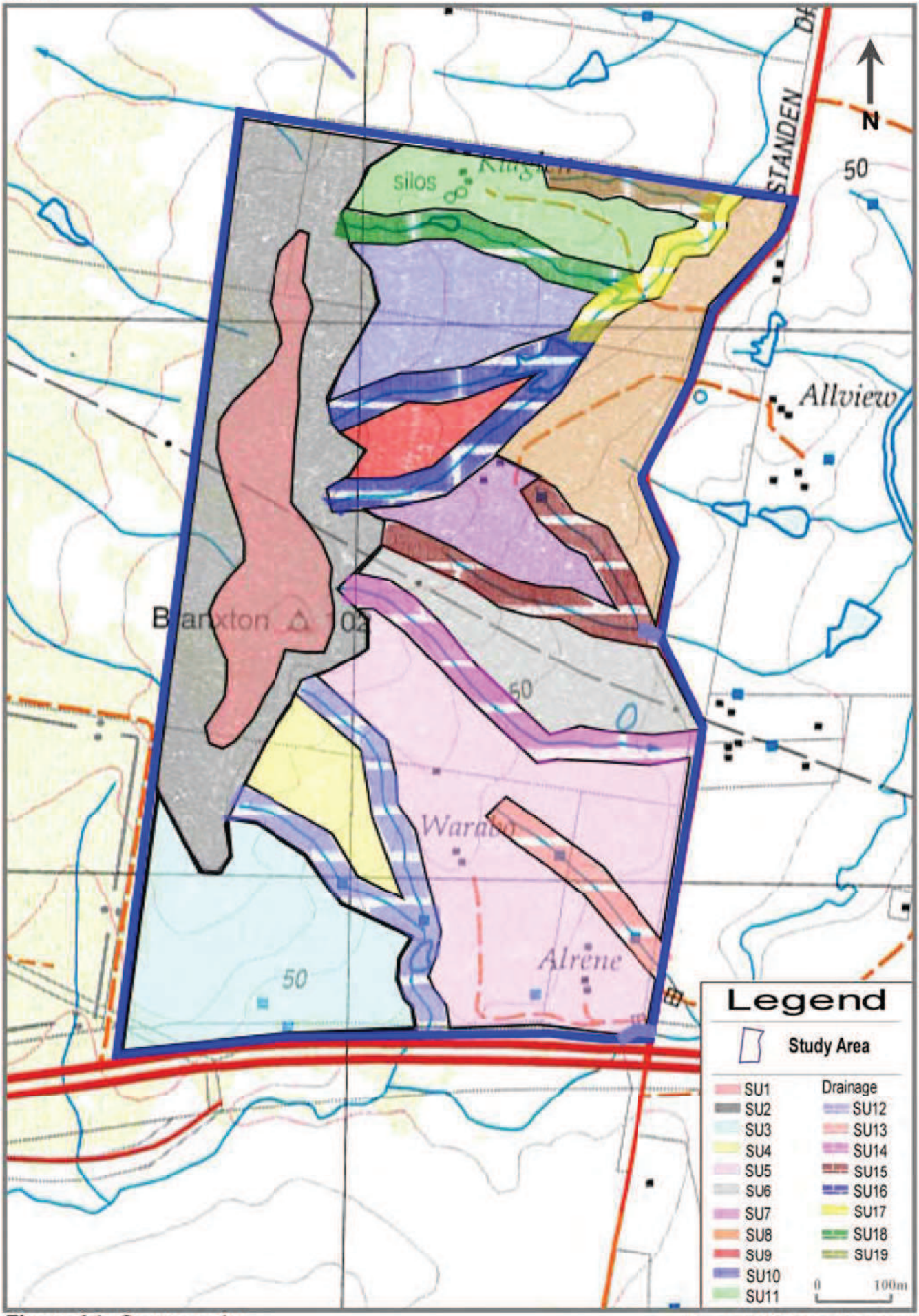


Figure 6.1 Survey units

Source: 1:25 000 Topo Series: Greta

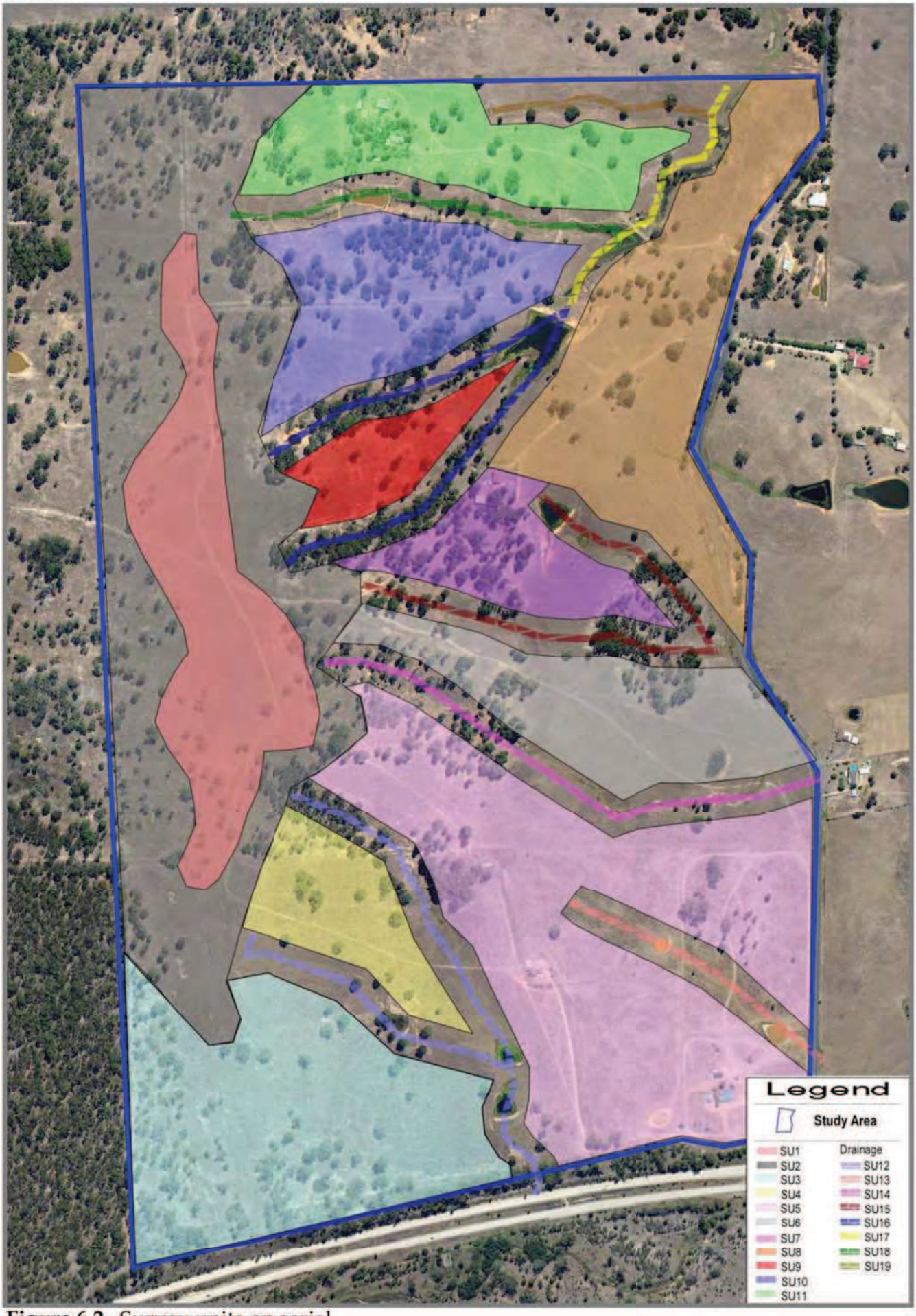


Figure 6.2 Survey units on aerial

Survey unit 2: Slope

This survey unit includes the slope surrounding the ridge and ends at the top of the eastern drainage lines. This unit has been previously cleared, used for agricultural purposes and grazing and has been recently cleared of trees in the south, west and north (when compared to the geotechnical aerial map in 2009). Currently there are numerous tracks through the unit and a power line easement running east west. Erosion is moderate with the B horizon exposed throughout with limited areas with the A horizon remaining. Vegetation is now predominantly pasture grass with a few scattered trees throughout. This contributed to reduced ground surface visibility which was 30%. Exposures were moderate at 70% and included increased erosion, exposed sandstone and tracks. The overall effective coverage for this survey is 21% and there is very limited to no potential for in situ cultural materials due to past disturbances, erosion, exposed sandstone bedrock and what appears to be a thinner A horizon. There were no raw materials utilised for stone tool manufacture visible.

Survey unit 3: Slope

This survey unit includes the south western portion and is bounded to the west and south by the study area boundary and fences, the drainage line to the east and north and SU 2 to the north. Being cleared, used for agricultural purposes and grazing in the past, present land uses and disturbances include a track to the south, a dam to the south and severe erosion throughout. The B horizon is exposed throughout with limited areas with the A horizon remaining. Erosion is extreme in the western portion as evidenced through the exposure of sandstone. Vegetation is pasture grass with a few scattered trees throughout all of which contributed to reduced ground surface visibility which was 35%. Exposures were high (80%) including erosion and tracks. The overall effective coverage for thus survey it is 28% and there is very limited to no potential for in situ cultural materials. There were no raw materials utilised for stone tool manufacture visible.

Survey unit 4: Slope

This survey unit includes an area in between two drainage lines in the south of the study area. This unit has been subject to previous clearing, agricultural practices, tracks and erosion. No geotechnical test pits are locate din the study area. The B horizon is exposed through the majority of this unit but there are some areas with the A horizon remaining. Vegetation is pasture grass with a few scattered trees throughout all of which contributed to reduced ground surface visibility which was 40%. Exposures were high (30%) including erosion and tracks. The overall effective coverage for the survey is 12% and there is low potential for in situ cultural materials. There were no raw materials utilised for stone tool manufacture visible.

Survey unit 5: Slope

This survey unit includes the south eastern portion and is bounder to the east and south by fencing and drainage lines the remainder of the unit. Previous land uses and disturbances include clearing, agricultural practices, tracks and three dwellings. Erosion is moderate with the B horizon exposed in the south eastern portion, north and north western corner. Although a

thin A horizon is present in some areas, it has been highly disturbed and is rather thin. Vegetation is pasture grass with a few scattered trees throughout all of which contributed to reduced ground surface visibility which was 40%. Exposures were high (80%) including erosion, tracks and the dwellings. The overall effective coverage for the survey is 32% and there is low to no potential for in situ cultural materials. There were no raw materials utilised for stone tool manufacture visible.

Survey unit 6: Slope

Including a section of slopes through the centre of the study area, this unit is bounded by drainage lines to the north and south and the study area boundary to the east. Previous land uses and disturbances include clearing, agricultural practices, tracks and a dam. No geotechnical test pits are locate din the SU. Erosion is moderate with the B horizon exposed in the south, west, north and some in the east along with sandstone exposed to the east. Although a thin A horizon is present in limited areas, it has been highly disturbed and is rather thin. Vegetation is pasture grass with a few scattered trees throughout all of which contributed to reduced ground surface visibility which was 45%. Exposures were great (80%) including erosion, tracks and the dam. The overall effective coverage for the survey is 36%, no raw materials usually used in the manufacture of artefacts were visible and there is low to no potential for in situ cultural materials.

Survey unit 7: Slope

Including a section of slopes through the centre of the study area, this unit is bounded by drainage lines to the north, east and south and SU 2 in the west. Previous land uses and disturbances include clearing, agricultural practices, tracks a dam and a dwelling. No geotechnical test pits are locate din the SU. Erosion is severe with the B horizon exposed throughout. Vegetation is pasture grass with trees to the west and south east all of which contributed to reduced ground surface visibility which was 40%. Exposures were high (60%) including erosion, tracks, dam and the dwelling. The overall effective coverage for the survey is 24%, no raw materials used in the manufacture of artefacts were visible and there is low to no potential for in situ cultural materials.

Survey unit 8: Slope

This survey unit includes the slope to the north east of the study area and is bounded by drainage lines to the south, west and north and the study area boundary also to the north and east. This unit has been previously cleared, used for agricultural purposes and grazing, fences, has numerous tracks throughout, and a dwelling. Erosion is moderate to the north with the B horizon exposed and there remains a thin layer of disturbed A horizon throughout the remaining area. Vegetation is pasture grass with a few scattered trees all of which contributed to reduced ground surface visibility which was 40%. Exposures were moderate to severe (80%) including erosion and tracks. The overall effective coverage for this survey is 32% and there is very limited to no potential for in situ cultural materials. There were no raw materials utilised for stone tool manufacture visible.

Survey unit 9: Slope

This survey unit includes a section through the centre that is bounded by drainage lines and DSU 2 to the west. Previous land uses and disturbances include clearing, agricultural practices, tracks, fencing and four footings for an unknown purpose. Erosion is severe with the B horizon exposed throughout with very limited areas still retaining an A horizon. Vegetation is pasture grass with a few scattered trees throughout all of which contributed to reduced ground surface visibility which was 50%. Exposures were high (90%) including erosion, tracks and the dwellings. The overall effective coverage for the survey is 45% and there is low to no potential for in situ cultural materials. There were no raw materials utilised for stone tool manufacture was visible.

Survey unit 10: Slope

This survey unit includes a section through the north that is bounded by drainage lines and DSU 2 to the west. Previous land uses and disturbances include clearing, agricultural practices, tracks and fencing. Erosion is moderate with the B horizon exposed through the majority of the study area and limited areas still retaining an A horizon. Vegetation is pasture grass scattered trees throughout all of which contributed to reduced ground surface visibility which was 45%. Exposures were high (80%) including erosion, tracks and the dwellings, overall effective coverage is 36% and there is low to no potential for in situ cultural materials. There were no raw materials utilised for stone tool manufacture visible.

Survey unit 11: Slope

This survey unit includes a section to the centre that is bounded by drainage lines to the south and east, the study area boundary to the north an SU2 to the west. Previous land uses and disturbances include clearing, agricultural practices, tracks, fencing and a dwelling. Erosion is severe with the B horizon exposed through the western portion and limited areas still retaining an A horizon in the east. Vegetation is pasture grass with a few scattered trees throughout all of which contributed to reduced ground surface visibility which was 60%. Exposures were high (90%) including erosion, tracks and the dwellings. The overall effective coverage for the survey is 54% and there is low to no potential for in situ cultural materials. There were no raw materials utilised for stone tool manufacture visible.

Survey unit 12: Drainage (2 1st orders that meet and form a 2nd order)

This unit includes the two southern 1st order drainage lines that meet towards the southern boundary and form a 2nd order. This area has been previously cleared and used for agricultural practices, grazing, fencing, tracks and two dams to the south. Erosion is moderate to severe with gullying and sheet wash resulting in the B horizon being exposed through the majority of the study area. Vegetation includes pasture grass with few trees. Visibility is high at 80% and exposures are also high at 90% with the overall effective coverage being 72% in this unit. Due to the high levels of disturbances and exposures there is a low to no potential for in situ cultural materials. Additionally, there were no raw materials utilised for stone tool manufacture visible.

Survey unit 13: Drainage (1st order)

This unit includes a first order drainage line north of SU 12. This SU has been previously cleared and used for agricultural practices, grazing, fencing, tracks and two dams. Erosion is low to moderate and is mainly around the dams with some gullying and sheet wash along the depression. This has resulted in the B horizon being exposed with limited A horizon remaining. Vegetation includes pasture grass with few trees. Visibility is moderate at 70% and exposures are also moderate at 80% with the overall effective coverage being 56% in this unit. Due to the high levels of disturbances and exposures there is a low to no potential for in situ cultural materials. Additionally, there were no raw materials utilised for stone tool manufacture or visible.

Survey unit 14: Drainage (1st order)

This unit includes a first order drainage line north of SU 13 and has been previously cleared and used for agricultural practices, grazing, fencing and tracks. Erosion is high along the depression in the form of both gullying and sheet wash that resulted in the B horizon being exposed with limited A horizon remaining. Vegetation includes pasture grass with trees to the north west. Visibility is moderate at 60% and exposures are high at 90% (erosion) with the overall effective coverage being 54% in this unit. Due to the high levels of disturbances and exposures there is a low to no potential for in situ cultural materials. Additionally, there were limited raw materials (silcrete) utilised for stone tool manufacture visible.

Survey unit 15: Drainage (2 1st orders)

This unit includes two 1st order drainage lines north of SU 14. This SU has been subject to previous clearing, agricultural practices, grazing, fencing, tracks, dam and part of a dwelling yard. The are no geotechnical test pits in this SU. Erosion is high along the depression in the form of both gullying and sheet wash that resulted in the B horizon being exposed with limited A horizon remaining. Pasture grass is present throughout and trees are located to the north west and south east. Visibility is moderate at 50% and exposures are also moderate at 70% (erosion) with the overall effective coverage being 35% in this unit. Given the high levels of disturbances and exposures there is a low to no potential for in situ cultural materials. Additionally, there were limited raw materials (silcrete) utilised for stone tool manufacture present or visible.

Survey unit 16: Drainage (2 1st orders)

This unit includes two 1st order drainage lines north of SU 15 and have been subject to previous clearing, agricultural practices, grazing, fencing, tracks, a small dam to the east and a large dam to the east and part of a dwelling yard. Sheet wash and gullying is moderate which has resulted in the B horizon being exposed with limited A horizon remaining. Pasture grass is present throughout and trees located throughout. Visibility is moderate at 50% and exposures are also moderate at 70% (erosion) with the overall effective coverage being 35% in this unit. Given the high levels of disturbances and exposures there is a low to no potential for in situ cultural materials. Limited raw materials (silcrete) were present or visible.

Survey unit 17: Drainage (2nd order)
This unit includes a 2nd order drainage lines north of SU 16. This SU has previously cleared, subject to agricultural practices, grazing, fencing, tracks, and a large dam. Sheet wash and gullying is moderate which has resulted in the B horizon being exposed with limited A horizon remaining. Pasture grass is present throughout and trees are scattered around. Visibility is moderate at 50% and exposures are also moderate at 70% (erosion) with the overall effective coverage being 42% in this unit. Given the high levels of disturbances and exposures there is a low to no potential for in situ cultural materials. Limited raw materials (silcrete) were visible.

Survey unit 18: Drainage (1st order)
This unit includes a 1st order drainage line north of SU 17. This SU has previously cleared, subject to agricultural practices, grazing, fencing, tracks, and a dam. Sheet wash and gullying is moderate which has resulted in the B horizon being exposed with limited A horizon remaining. Pasture grass is present throughout and trees are scattered around. Visibility is moderate at 60% and exposures are high at 80% (erosion) with the overall effective coverage being 48% in this unit. Given the high levels of disturbances and exposures there is a low to no potential for in situ cultural materials. Limited raw materials (silcrete) were present.

Survey unit 19: Drainage (1st order)
This unit includes a 1st order drainage line north of SU 18. This SU has previously cleared, subject to agricultural practices, grazing and fencing. Sheet wash and gullying is moderate which has resulted in the B horizon being exposed with limited A horizon remaining. Pasture grass is present throughout and trees are scattered around. Visibility is moderate at 60% and exposures are also moderate at 80% (erosion) with the overall effective coverage being 48% in this unit. Given the high levels of disturbances and exposures there is a low to no potential for in situ cultural materials. Limited raw materials (silcrete) were present.

6.4 *EFFECTIVE COVERAGE*

Effective coverage is an estimate of the amount of ground observed taking into account local constraints on site discovery such as vegetation and soil cover. There are two components to determining the effective coverage: visibility and exposure.

Visibility is the amount of bare ground on the exposures which may reveal artefacts or other cultural materials, or visibility refers to 'what conceals'. Visibility is hampered by vegetation, plant or leaf litter, loose sand, stony ground or introduced materials (such as rubbish) On its own, visibility is not a reliable factor in determining the detectability of subsurface cultural materials (DECCW 2010/783:39).

The second component in establishing effective coverage is exposure. Exposure refers to 'what reveals'. It estimates the area with a likelihood of revealing subsurface cultural materials rather than just an observation of the

amount of bare ground. Exposure is the percentage of land for which erosion and exposure is sufficient to reveal cultural materials on the surface (DECCW 2010/783:37).

Vegetation is predominantly pasture grass with scattered trees throughout. Erosion in the form of sheet wash is moderate to severe across the majority of the study area resulting in the B horizon being exposed and little A horizon remaining. The effective coverage for the study area was determined for both visibility and exposure ratings and *Table 6.1* details the visibility rating system used.

Table 6.1 ***Ground surface visibility rating***

Description	GSV Rating %
Very Poor - heavy vegetation, scrub foliage or debris cover, dense tree of scrub cover. Soil surface of the ground very difficult to see.	0-9%
Poor – moderate level of vegetation, scrub, and / or tree cover. Some small patches of soil surface visible in the form of animal tracks, erosion, scalds, blowouts etc, in isolated patches. Soil surface visible in random patches.	10-29%
Fair – moderate levels of vegetation, scrub and / or tree cover. Moderate sized patches of soil surface visible, possibly associated with animal, stock tracks, unsealed walking tracks, erosion, blow outs etc, soil surface visible as moderate to small patches, across a larger section of the study area.	30-49%
Good – moderate to low level of vegetation, tree or scrub cover. Greater amount of areas of soil surface visible in the form of erosion, scalds, blowouts, recent ploughing, grading or clearing.	50-59%
Very Good – low levels of vegetation / scrub cover. Higher incidence of soil surface visible due to recent or past land-use practices such as ploughing, grading, mining etc.	60-79%
Excellent - very low to non-existent levels of vegetation/scrub cover. High incidence of soil surface visible due to past or recent land use practices, such as ploughing, grading, mining etc.	80-100%
Note: this process is purely subjective and can vary between field specialists, however, consistency is achieved by the same field specialist providing the assessment for the one study area/subject site.	

As indicated in *Table 6.2*, the effective coverage for study area illustrates that visibility is moderate with overall effective coverage being 35.18% with grass being the limiting factor.

A photographic record of the study area was taken and shown in *Figure 6.3* which matches *Photographs 1* to *25*.

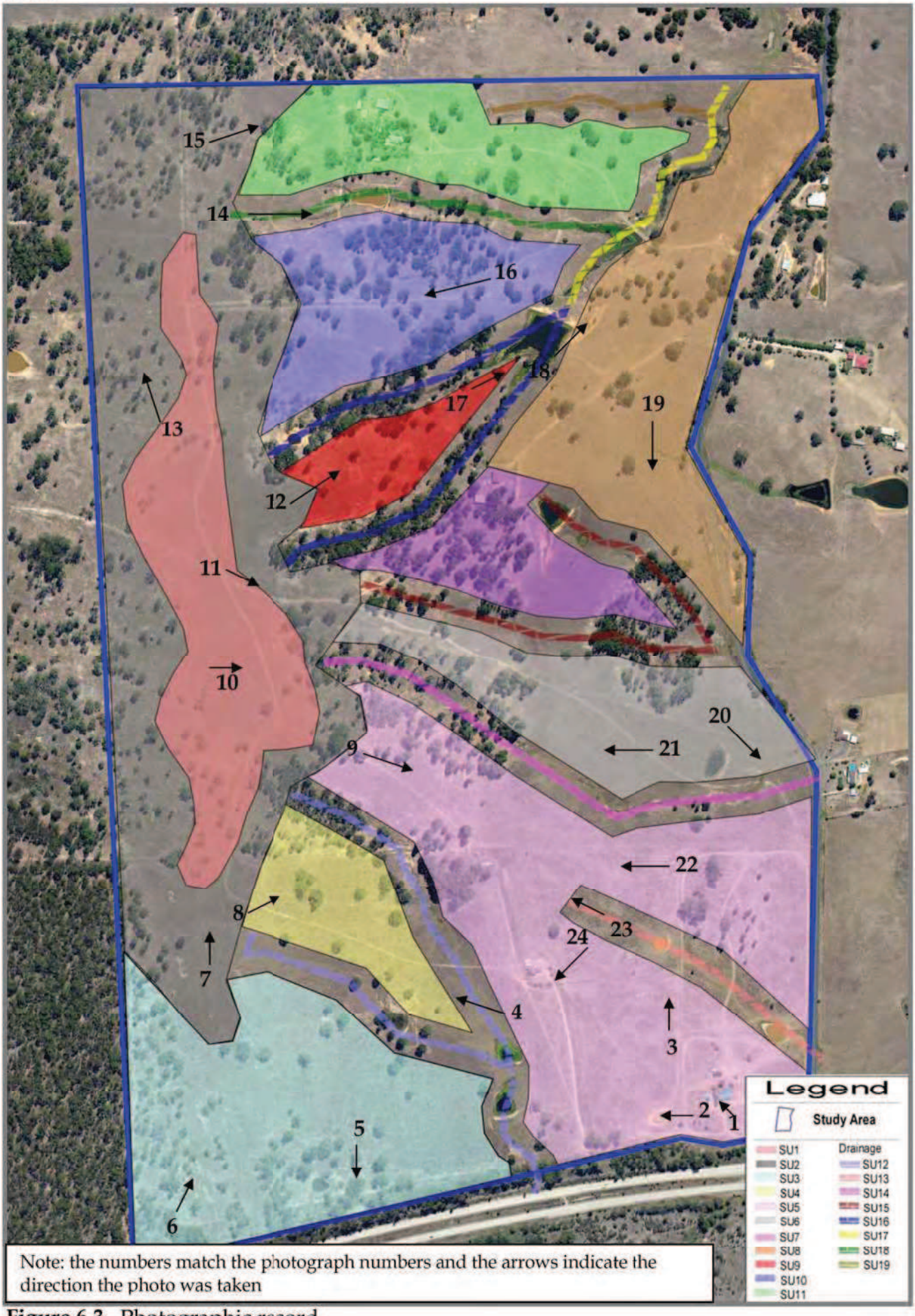


Figure 6.3 Photographic record

Photograph 1

Photograph 2

Photograph 3

Photograph 4

Photograph 5

Photograph 6

Photograph 7

Photograph 8

Photograph 9

Photograph 10

Photograph 11

Photograph 12

Photograph 13

Photograph 14

Photograph 15

Photograph 16

Photograph 17

Photograph 18

Photograph 19

Photograph 20

Photograph 21

Photograph 22

Photograph 23

Photograph 24

Photograph 25

Table 6.2 Effective coverage

SU	Landform	Area (m2)	Vis. %	Exp. %	Exposure type	Previous disturbances	Present disturbances	Limiting visibility factors	B horizon exposed	A horizon remaining	Potential for subsurface	Effective coverage (m2)	Effective coverage %
1	ridge	180,000	40%	90%	erosion, tracks	clearing, agriculture, grazing, tracks, fences	grazing, tracks, erosion, exposed sandstone	grass	yes	limited	low	64,800	**36%**
2	slope	187,500	30%	70%	erosion, tracks	clearing, agriculture, grazing, tracks, fences	grazing, tracks, erosion, exposed sandstone	grass	yes	limited	low	39,375	**21%**
3	slope	150,000	35%	80%	erosion, tracks, dam	clearing, agriculture, grazing, tracks, fences	grazing, tracks, erosion, exposed sandstone, dam	grass	yes	limited	low	42,000	**28%**
4	slope	80,000	40%	30%	erosion, tracks	clearing, agriculture, grazing, tracks, fences	grazing, tracks, erosion	grass	yes	limited	low	9,600	**12%**
5	slope	360,000	40%	80%	erosion, tracks, dams, housing	clearing, agriculture, grazing, tracks, fences	grazing, tracks, erosion, power poles	grass	yes	limited	low	115,200	**32%**
6	slope	150,000	45%	80%	erosion, tracks, dams, housing	clearing, agriculture, grazing, tracks, fences, dwelling	grazing, tracks, erosion, tracks, dam	grass	yes	limited	low	54,000	**36%**
7	slope	9,000	40%	60%	erosion, tracks, dams, housing	clearing, agriculture, grazing, tracks, fences, dam	grazing, tracks, erosion, tracks, dam	grass	yes	limited	low	2,160	**24%**
8	slope	150,000	40%	80%	erosion, tracks, dams, housing	clearing, agriculture, grazing, tracks, fences, dwelling	grazing, tracks, erosion, tracks, dwelling	grass	yes	limited	low	48,000	**32%**
9	slope	450,000	50%	90%	erosion, tracks, dams, housing	clearing, agriculture, grazing, tracks, fences, old footings	grazing, tracks, erosion, tracks	grass	yes	limited	low	202,500	**45%**
10	slope	125,000	45%	80%	erosion, tracks, dams, housing	clearing, agriculture, grazing, tracks, fences	grazing, tracks, erosion, tracks	grass	yes	limited	low	45,000	**36%**
11	slope	102,000	60%	90%	erosion, tracks, dams, housing	clearing, agriculture, grazing, tracks, dams	grazing, tracks, erosion, tracks, dwelling	grass	yes	limited	low	55,080	**54%**
12	drainage	2,000	80%	90%	erosion, dams, tracks	clearing, agriculture, grazing, tracks, fences, dwelling	clearing, agriculture, grazing, tracks, fences, dwelling	grass, leaf litter	yes	limited	low	1,440	**72%**
13	drainage	7,000	40%	90%	erosion, dams, tracks	clearing, agriculture, grazing, tracks, fences, dams	clearing, agriculture, grazing, tracks, fences, dwelling	grass, leaf litter	yes	limited	low	64,800	**36%**
14	drainage	16,000	30%	70%	erosion, dams, tracks	clearing, agriculture, grazing, tracks, fences	clearing, agriculture, grazing, tracks, fences, dwelling	grass, leaf litter	yes	limited	low	39,375	**21%**

SU	Landform	Area (m2)	Vis. %	Exp. %	Exposure type	Previous disturbances	Present disturbances	Limiting visibility factors	B horizon exposed	A horizon remaining	Potential for subsurface	Effective coverage (m2)	Effective coverage %
15	drainage	1,600	50%	70%	erosion, dams, tracks	clearing, agriculture, grazing, tracks, fences	clearing, agriculture, grazing, tracks, fences, dwelling	grass, leaf litter	yes	limited	low	560	35%
16	drainage	15,000	50%	70%	erosion, dams, tracks	clearing, agriculture, grazing, tracks, fences, dwelling	clearing, agriculture, grazing, tracks, fences, dwelling	grass, leaf litter	yes	limited	low	5,250	35%
17	drainage	900	60%	70%	erosion, dams, tracks	clearing, agriculture, grazing, tracks, fences, dwelling	clearing, agriculture, grazing, tracks, fences, dwelling	grass, leaf litter	yes	limited	low	378	42%
18	drainage	1,000	60%	80%	erosion, dams, tracks	clearing, agriculture, grazing, tracks, fences, dwelling	clearing, agriculture, grazing, tracks, fences, dwelling	grass, leaf litter	yes	limited	low	480	48%
19	drainage	5,000	60%	80%	erosion, dams, tracks	clearing, agriculture, grazing, tracks, fences, dwelling	clearing, agriculture, grazing, tracks, fences, dwelling	grass, leaf litter	yes	limited	low	2,400	48%
Totals		**1,992,000**										**700,783**	
											Overall effective coverage %		**35.18%**

The disturbances were consistent across the study area and included clearing, agricultural activities, grazing, fencing, tracks, dams and dwellings. Natural disturbances and taphonomic processes of sheet wash and gullying and it can also be expected that bioturbation also occurs. All of these have impacted on the landscape and any cultural material that may have been present and as described in detail in *Chapter 3*, these disturbances result in the lateral and horizontal movement of materials. The disturbances are illustrated in *Figure 6.4*.

Landforms include a ridge, slopes and drainage, which when in close proximity to reliable water, are conductive to occupation and suggested by the predictive model. As indicated in *Table 6.3*, the drainage system had the best effective coverage followed by the slopes and then the ridge. This appears to be related to erosion and the downward movement of soils.

Table 6.3 ***Landform summary & effective coverage***

Landform	Landform area (m2)	Area effectively surveyed (m2)	% landform effectively surveyed
Ridge	180,000	64,800	36%
Slopes	1,763,500	612,915	35%
Drainage	48,500	23,068	48%

6.5 ARCHAEOLOGICAL SITES

Sites were labelled according to the project title, e.g. MR/1 where MR represents Murray's Rise, and 1 indicates the site number allocated consecutively.

6.5.1 *Definition of a Site*

A 'site' can be defined by various factors. For this study a 'site' was defined on the combination of the following inter-related factors:

1) landform;
2) exposure and visibility;
3) visible boundaries of artefacts; and
4) a feature identified by the Aboriginal community on the basis of their own cultural knowledge and significance.

The 'site area' was defined as the area in which artefacts were observed on a landform, though it must be remembered that this may not represent an accurate picture of site size. Visibility of artefacts is affected by differences in vegetation cover and hence ground surface visibility, as well as the degree of natural and human-induced disturbance.

6.5.2 *Definition of site complex*

Site complex refers to sites that occur in groups. For example, complexes may consist of burial grounds and carved trees, artefact scatters that represent different stages of procurement and manufacture or artefact

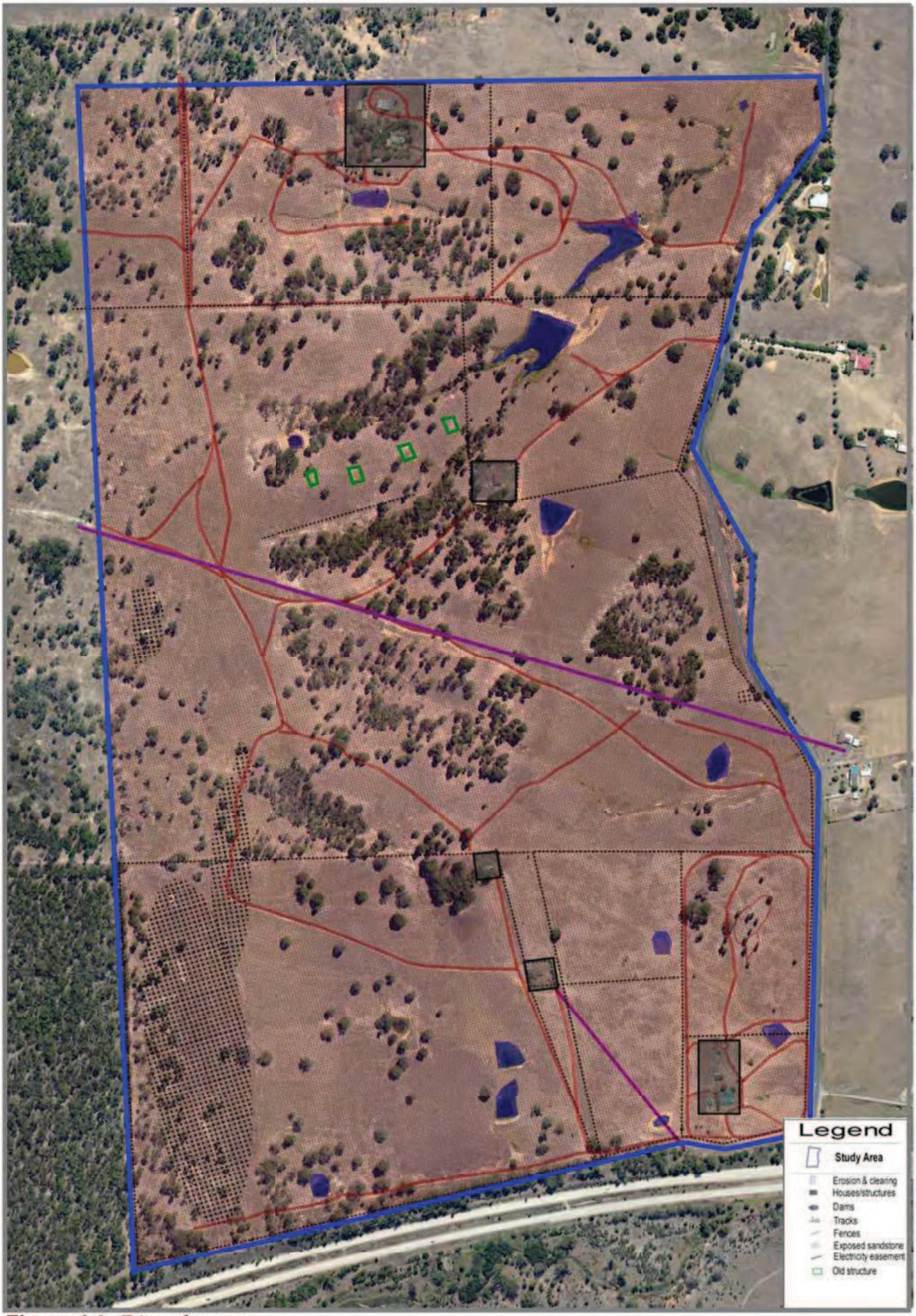


Figure 6.4 Disturbances

scatters and shell middens. Complexes may also consist of artefact scatters that are connected across a landscape with the scatters being either specific activity centres (such as tool manufacturing sites) or larger base camp areas (with more artefacts and a variety of artefacts).

6.5.3 *Mapping identified sites*

MCH use topographic maps with MGA system 1994 (unless they are new maps produced after 1999 that have used the MG94 system) and our hand held Global Positioning System (GPS) units use MGA.

It is important to note that the Global Positioning System is operated by the United States and is subject to changes that may affect the accuracy and performance of all GPS equipment. At present, the hand held unit operated by MCH have an estimated error of approximately 5-10 metres though this is also dependant on the number of satellites available and detected and other factors such as tree coverage/interference.

6.5.4 *Sites identified*

No sites were identified. This is likely due to a number of factors including;

1) As the Hunter River is over 4 kilometres away and 3rd and 4th order stream are located to the east of the study area, it appears that distance from reliable water would have played an important role in the occupation of the area and rendered the study area not suitable for camping. However, the area may have been suitable for hunting/gathering and/or travel and evidence of this would be expected to have been isolated finds and/or low density artefact scatters;

2) Disturbances in the form of clearing and agricultural practices would have displaced the expected isolated finds and/or low density artefact scatters;

3) The severe erosion would also have contributed to the disturbance/destruction of any cultural materials that may have been present.

6.6 *POTENTIAL ARCHAEOLOGICAL DEPOSIT (PAD)*

The terms 'Potential Archaeological Deposit (PAD)' and 'area(s) of archaeological sensitivity' are used to describe areas that are likely to contain sub-surface cultural deposits. These sensitive landforms or areas are identified based upon the results of fieldwork, the knowledge gained from previous studies in or around the subject area and the resultant predictive models. Any or all of these attributes may be used in combination to define a PAD.

The likelihood of a landscape having been used by past Aboriginal societies and hence containing archaeologically sensitive areas is primarily based on the availability of local natural resources for subsistence, artefact manufacture and ceremonial purposes. The likelihood of surface and subsurface cultural materials surviving in the landscape is primarily based on past land uses and preservation factors.

No PADs were identified. This is likely due to a number of factors including;

1) The Hunter River is over 4 kilometres away and 3rd and 4th order stream are located to the east of the study area. Therefore, distance from reliable water would have rendered the study area not suitable for occupation. However, the area may have been suitable for hunting/gathering and/or travel and evidence of this would be expected to have been isolated finds and/or low density artefact scatters;

2) Disturbances from previous land uses such as clearing and agricultural practices would have displaced any cultural materials that may have been present;

3) The severe erosion would also have contributed to the disturbance/destruction of any cultural materials that may have been present.

6.7 *REGIONAL & LOCAL CONTEXT & INTERPRETATION*

Given the substantial distance of the study area from the Hunter River and other reliable water sources outside the study area to the east, the lack of sites present and PADs identified is consistent with the landforms, distance to water and disturbances across the area.

Reliable water is essential for survival as is reliable food sources that are typically associated with reliable water. The further away from these resources one is, the more difficult it is to survive and camp. This pattern of occupation is manifest in the archaeological record through site types, raw material types, landforms and proximity to water (Refer to *Section 5.8*).

The results of this assessment, the absence of material culture in association with the distance from water and associated resources, landforms and past land uses, fit with the patterning throughout the local area and the wider region.

6.8 *DISCUSSION*

Sites provide valuable information about past occupation, use of the environment and its specific resources including diet, raw material

transportation, stone tool manufacture, and movement of groups throughout the landscape.

Proximity to water was an important factor in past occupation of the area, with sites reducing in number significantly away from water with most sites located within 50 metres of the tributaries. The surrounding area contains very limited raw materials that are typically used in the manufacture of stone tools, and as such it can be assumed that any artefacts identified would be of materials traded and/or transported from other locations. The distance from reliable water would not have allowed the study area to be occupied but may have been suitable for travel, hunting and/or gathering and this would manifest in the archaeological record through isolated finds and/or low density artefact scatters. However, the disturbances throughout including whole sale clearing and erosion as well as dams, fencing, dwellings and other structures and power easements would have had a significant impact on any cultural materials that may have been present. The results fit with the predictive model in relation to distance form water, landforms and disturbances.

7 ASSESSMENT OF IMPACTS

The archaeological record is a non-renewable resource that is affected by many processes and activities. As outlined in *Chapter 2*, the various natural processes and human activities may impact on archaeological deposits through both site formation and taphonomic processes. *Chapter 4* describes the impacts within the study area, showing how these processes and activities have disturbed the landscape and associated cultural materials in varying degrees.

7.1 IMPACTS

The project is only in the rezoning stage and as such there is no development or impacts at this stage.

8 MITIGATION AND MANAGEMENT STRATEGIES

Specific strategies, as outlined through the Due Diligence Code of Practice for the Prctection of Aboriginal Objects in NSW (DDCOPPAC) and the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (COPAIAO), (DECCW 10011a,b), are considered below for the management of identified sites and potential archaeological deposits within the study area.

One of the most important considerations in selecting the most suitable and appropriate strategy is the recognition that Aboriginal cultural heritage is very important to the local Aboriginal community. Decisions about the management of sites and potential archaeological deposits should be made in consultation with the appropriate local Aboriginal community.

8.1 CONSERVATION/PROTECTION

The DECCW is responsible for the conservation/protection of Indigenous sites and they therefore require good reason for any impact on an indigenous site.

Conservation is the first avenue and is suitable for all sites, especially those considered high archaeological significance and/or cultural significance. Conservation includes the processes of looking after an indigenous site or place so as to retain its cultural significance and are managed in a way that is consistent with the nature of peoples' attachment to them.

No sites were identified and the study area is considered highly disturbed through past land uses and erosion and as such conservation is not justified.

8.2 FURTHER INVESTIGATION

An Aboriginal Heritage Impact Permit (AHIP) is no longer required to undertake test excavations (providing the excavations are in accordance with the Code of Practice for Archaeological Investigations in NSW).

Subsurface testing is appropriate when a Potential Archaeological Deposit (PAD) has been identified, and it can be demonstrated that sub-surface Aboriginal objects with potential conservation value have a high probability of being present, and that the area cannot be substantially avoided by the proposed activity. However, testing may only be undertaken as per the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2011) and discussions/consultation with the local Aboriginal community.

No sites or PADs were identified and the study area is considered highly disturbed through past land uses and erosion and as such further investigations are not justified.

8.3 *AHIP*

If harm will occur to an Aboriginal object or Place, then an AHIP is required form the DECCW.

An AHIP is required when a site is identified but its extent, the nature of its contents, level of integrity and/or its significance cannot be adequately assessed through a surface survey. In this case, if a systematic excavation of the known site could provide benefits and information for the Aboriginal community and/or archaeological study of past Aboriginal occupation, a salvage program may be an appropriate strategy to further assess the site to determine its extent, nature, content, integrity and significance. The AHIP may also include surface collection of artefacts.

No sites or PADs were identified and the study area is considered highly disturbed through past land uses and erosion and as such an AHIP is not required.

8.4 *MONITORING*

An alternative strategy for areas where archaeological deposits are predicted to occur is was to monitor development works for cultural materials, predominantly during the initial earth moving and soil removal works. This was the main strategy for managing the possible occurrence of Aboriginal skeletal remains.

However, with the legislative changes, due diligence process and AHIP restructuring, monitoring is not an option as if there is even a slight possibility of cultural materials being present this must be addressed through the due diligence process and Code of Practice.

9 RECOMMENDATIONS

9.1 GENERAL

1) The persons responsible for the management of on site works will ensure that all staff, contractors and others involved in construction and maintenance related activities are made aware of the statutory legislation protecting sites and places of significance. Of particular importance is the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010, under the National Parks and Wildlife Act 1974.

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Definitions

Aboriginal object is defined in the National Parks and Wildlife Act 1974 (NPW Act) as any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area within NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains. An object is defined as physical evidence of the use an area by Aboriginal people and can be referred to as an Aboriginal site, relic or cultural material.

Declared Aboriginal place is a statutory concept, meaning any place declared to be an Aboriginal place (under s.84 of the NPW Act) by the Minister administering the NPW Act, by order published in the Gazette, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture. An Aboriginal place is defined as those areas that have no objects, no physical evidence of past Aboriginal occupation or use, but do hold special significance to Aboriginal culture. An Aboriginal place can have spiritual, significance, natural resource usage, historical, social, educational or any other type of significance.

Harm is defined as an act that may destroy, deface or damage an Aboriginal object or place. In relation to an object, this means the movement or removal of an object from the land in which it has been situated.