CHAPTER 8

INTERPRETING CULTURAL LANDSCAPES

One artificial feature, not observed by me in other places, distinguishes the localities principally frequented by the natives, and consists in the lofty mounds of burnt clay, or ashes used by them in cooking. (Mitchell 1839 Vol II: 80-81).

8.1 INTRODUCTION

This chapter utilises concepts of Interpretive Archaeology and a finer analytical scale to examine the recursive action of human agency and historical processes on the cultural landscape of the Hay Plain. To discover more detail about the mound builders and their neighbours, I attempt to 'shift [my] "object" of study away from ... macroscale "processes" and towards a more subject-centred interest in meaningful social and material praxis.' (Dobres 1995:53-4). There is a need to link observable material patterning, such as mounds, to the agency of social reproduction and understand the role of material culture in dynamic social processes (Dobres & Robb 2005:159). Archaeological and historical evidence proposes multiple and overlapping interpretations of the landscape through the actions and words of ancestors, *story* beings, historic and current occupants. The Hay Plain 'landscape is an entity that exists by virtue of its being perceived, experienced, and contextualised by people' (Ashmore & Knapp 1999:1). Aspects of the constructed, conceptual, and ideational landscape are examined, recognising that it can be 'all of these things at all times' (Ashmore & Knapp 1999:10).

A major research aim is to establish whether mounds on the Hay Plain have been deliberately shaped, or alternatively, grown without any specific shape or size template as the inevitable result of an activity such as heat retainer oven use. The chapter begins by attempting to establish whether the shape, size and patterning of mounds supports the idea of mounds having 'style', that is form elements and form relationships. This is the initial step in considering whether social processes may be

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interpreted using the material evidence of the mounds or other constructed landscape features. Mounds are considered as material culture and explicit 'middle range interpretive methodologies' suitable to 'sorting out the abundance of meanings in human action' are employed (Dobres & Robb 2005:164). The argument then follows (8.3) through discussions of what other constructed landscape features with 'style' contribute to the cultural landscape, and how they are composed to convey meaning like elements in a painting. The chapter then considers (8.4) how the landscape was conceptualised in the past, using ethnographic accounts of stories or myths, and how this links into the current conceptualisation of the landscape. Ethnographic evidence is then used (8.5) to describe how the landscape was socialised by a complex multi-layered social system which in itself was an agency affecting social relations within the Hay Plain and with neighbours. Finally this Chapter considers (8.6) how some landscape elements were managed, and how the combination of managing resources and cooking in mounds influenced social relations, in particular gender relations.

8.2 ARE MOUNDS SHAPED?

8.2.1 Roundness and Moundedness

The attributes of 'roundness' and 'moundedness' are considered here to establish whether different styles of mound can be delineated. The data base for the Hay Plain considered here comes from a range of sources including Littleton (1993, 1995a), Klaver (1995), Pardoe & Martin (2001) and Martin 1995-2000. Only those mounds with length, width and height measurements and which are relatively intact are considered. In some cases there are more mounds with length and width measurements than height measurements, so the sample size for an area may vary depending on what measurements are being considered. Areas used for comparison include the Macquarie Marshes (Balme & Beck 1996) to the north of the Hay Plain, and two areas to the south of the Hay Plain; the Barmah State Forest on the Murray River (Bonhomme 1990a), and Balpool on the Edwards River (Edmonds & Long 1998). The mound attributes are also compared to attributes of ashy deposits recorded in the Menindee Lakes area to test the idea of the Hay Plain mounds having 'style'. The size and shape data is tabulated in Appendix 8.1. The largest Hay Plain Southwest mound (200m x 120m x .9m) has been removed from the charts to make them easier to read.

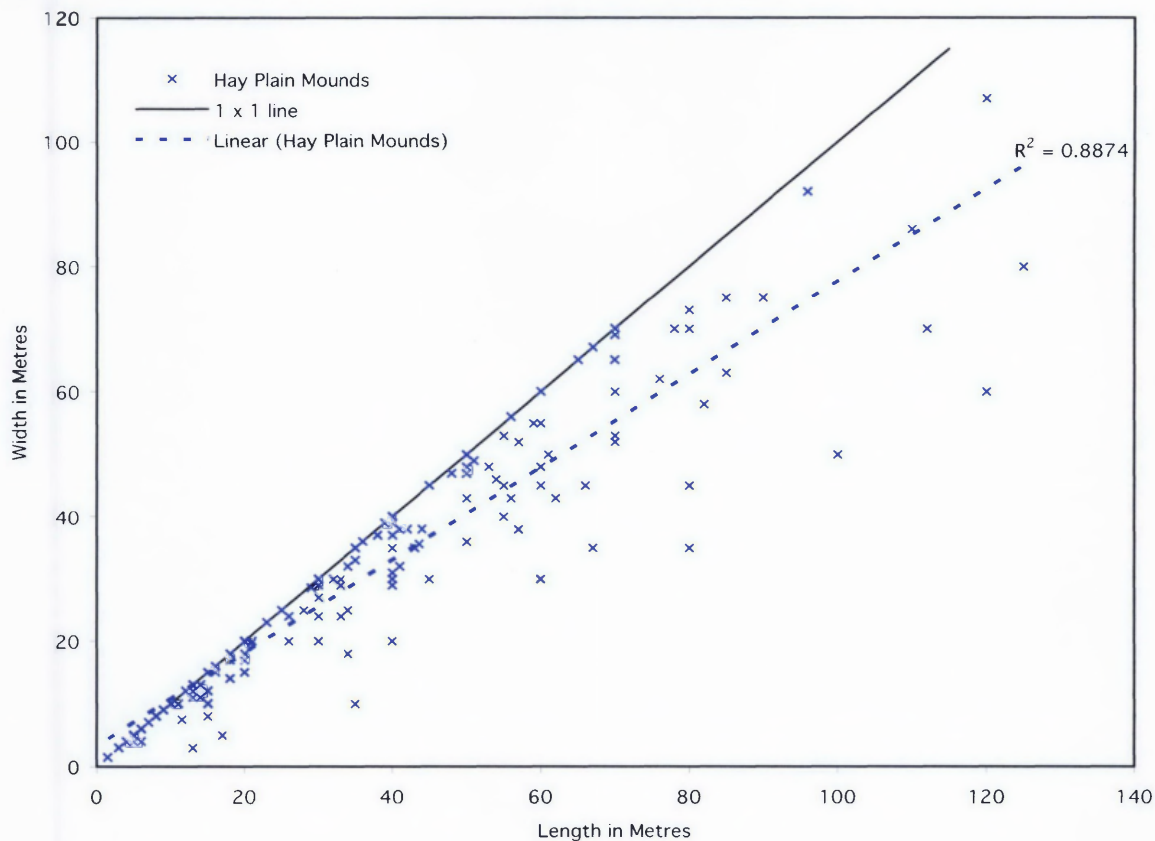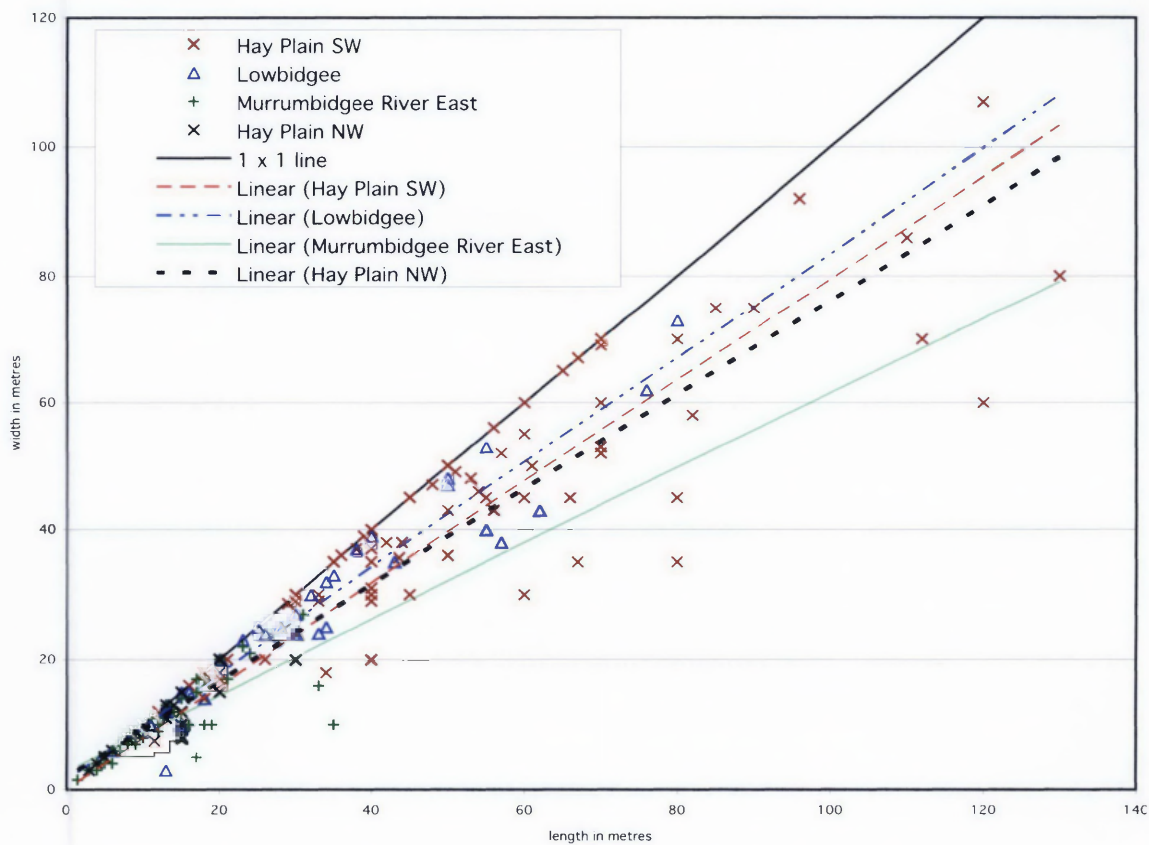Figure 8.1 Length x Width for Total Hay Plain Mound Sample (N=188)

Figure 8.2 Length x Width for Hay Plain Mounds by Major Landform (N=188)

The Hay Plain is characterised by a range of mound shapes, with different degrees of 'roundness'. Figure 8.1 shows the graph of length plotted against width for all Hay Plain mounds showing the tendency for round mounds over oval mounds. The mounds cluster closely to the 1 x 1 line (round), with the linear trendline beginning to diverge from the 1 x 1 line as the mounds get larger. Figure 8.2 compares the major landforms of the Hay Plain, which all show slightly different trends. The Hay Plain Northwest and Lowbidgee show a slightly more 'rounded' trend than the Hay Plain Southwest, and the Murrumbidgee River East is the least 'rounded'. The most oval or elongated mounds have lengths no more than twice the width, and tend to be the larger mounds (eg. Tchelery 1.1 and Ravensworth 3). A number of areas on the Hay Plain Southwest have round mounds in various stages of joining up to become one oval mound. These mounds show how two round mounds can join to form an oval mound, with a neck of material joining two round high mounds. This indicates that the mounds did not just coalesce as they grew, but were deliberately joined together to form one oval mound. The Tchelery 1 mound evidently originated as two round mounds joined together, as the contour diagram shows two high points on each end with a narrower slightly lower middle (Figure 5.13). No obvious cases of more than 2 mounds joining were found, that is, mounds were either round to slightly oval, or oval with the length twice the width from two joining together. However, the very large and unusual mound 'The Mount' on Ravensworth could conceivably have been made up of one mound that kept growing or many mounds that joined into one oval mound. The axis of the oval mounds seems to be random with different axis directions and placed differently in regard to the swamp/lake feature. Tchelery 1 longitudinal axis is 17 degrees north and is parallel to the swamp margin, Ravensworth 3 has a longitudinal axis of 85 degrees east and is perpendicular to the lake margin.

The Menindee ashy deposits tend to lack 'roundness', i.e. they are seldom formed into definite circular or oval based deliberately mounded up deposits. The outline is often irregular and elongate following the natural topographic feature they have been built on such as levee bank or source bordering dune. Figure 8.3 clearly indicates that while some tend towards roundness many are linear in shape, with length 5-10 times the width. Figure 8.3 compares the 'roundness' of the Hay Plain South West mounds and the Menindee ashy deposits, the mounds showing a clear tendency to roundness, with a linear trendline of reasonably good fit not far below the 1 x 1 line. In contrast the Menindee deposits have a linear trendline further from the 1 x 1 line and with a bad fit, indicating much more variability in the ratio of length to width and a

greater tendency for length to be much greater than width. Thus the Menindee ashy deposits, while composed of similar material (Chapter 7) to the Hay Plain mounds, are made without a definite shape template for roundness.

The concept of 'moundedness' is difficult to define, but proposes that people deliberately created a mounded cultural deposit, rather than just spreading material out over the landscape. A mounded cultural deposit may be made by excavating sediment and carrying it in baskets or similar, and dumping it onto a central place, as for example the Hedgepeth mound in eastern North America (Saunders & Allen 1994). Alternatively, it may be formed by continued activity in a central place that involves bringing material onto the site in the form of heat retainers, fuel, food, and continuing to build up rather than out. Either way there is a deliberate action with a different outcome to the usual occupation area where deposit is built up in a less deliberate and less systematic way.

The mound length plotted against mound height for each area of the Hay Plain has trendlines that vary for each area (Figure 8.4). However, there are more attributes to moundedness. Moundedness has to do with roundness and height, as well having well defined edges and steeply sloping sides. There is a template, or numerous templates, that are recreated across the landscape. I attempted to find a formula for 'moundedness' or types of 'moundedness' but without complete success. The Relative Shape Index of W/L x W/T was used with the proviso that a perfect mound would approach the number two rather than the number one as it has one side only (a sphere has a score of 1, a half sphere a score of 2). However, this formula has the flaw that small mounds will be more 'mounded' simply because the ratio of height to length/width is naturally greater for a smaller mound (a mound 5 x 5 metres and 0.5 metres high gets a very mounded score, but a mound of 100 x 100 metres and 0.5 metres high gets a very poor score, it would have to be 10 metres high to score the same as the previous example!). Despite this shortcoming the Relative Shape Index (RSI) or Moundedness Index was used to see if it could pinpoint local or regional patterns.

Figure 8.7 and 8.8c, Tables 8.1 and 8.2 shows moundedness for areas of the Hay Plain, and comparative areas including the Macquarie Marshes (Balme & Beck 1996), and the Barmah State Forest (Bonhomme 1990a). The results indicate that none of the areas have mounds that approach the shape of a half sphere (score of 2), which is not

surprising. The mounds of the Macquarie Marshes and the Barmah State Forest are on average more mounded than the Hay Plain mounds. This is influenced by their smaller size than the Hay Plain Southwest and Lowbidgee, but they are not smaller than the Murrumbidgee East (Table 8.1, Figures 8.7, 8.8). When the Hay Plain mounds are broken up into location groups, there is a wide range of Moundedness scores. Figure 8.7 shows the relationship between moundedness and length. The small Illiwara mounds score 30, but the much larger Tchelery 1.1-1.8 mounds score 23, better than any other group considered. The nearby Dry Lake group have the next closest score (34), thus giving the combined Dry Lake /Tchelery area an exceptional score of moundedness. However, when the mounds are considered individually, mounds with moundedness scores of under 30 are located throughout most groups of mounds, but once again particularly in the Dry Lake/Tchelery area.

Looking at 'moundedness' factors indicates that even among mounds of similar length/width there may be different templates or concepts of mound shape. As an example the Hay Plain Southwest mounds were compared with the adjacent mounds on the Lowbidgee section of the Murrumbidgee River at Murrumbudgee. The Murrumbudgee mounds are built more like a platform, with a large length/width or area, with steep sides, but relatively low and with flat tops. The Hay Plain Southwest mounds tend to be higher for the same size, with steep sides and a domed shape (Figures 8.7, 8.8).

The significant differences between the mounds of the Hay Plain and the ashy deposits of the Menindee Lakes include the shape or style. The Menindee Ashy deposits tend to lack 'moundedness' i.e. are usually not formed into deliberately mounded up deposits. Figure 8.5 shows the graph of height above ground by length, with those deposits exposed at ground level or buried being given the height of zero. It is clear that many of the ashy deposits lack height and those that do show a maximum of 0.5 metres, with an average height of .08 metres. Of those deposits that do have height the average height is 0.16 metres. At least one of the deposits with some height seems to have been enhanced by erosion that has scoured around the edges and created an impression of 'moundedness' (photo 4). Figure 8.5 also includes the Hay Plain Southwest mounds for comparison, which clearly have a much greater tendency for 'moundedness', or height to increase with length.

Figure 8.3 Menindee Ashy Deposits & Hay Plain South West Mounds Length x Width
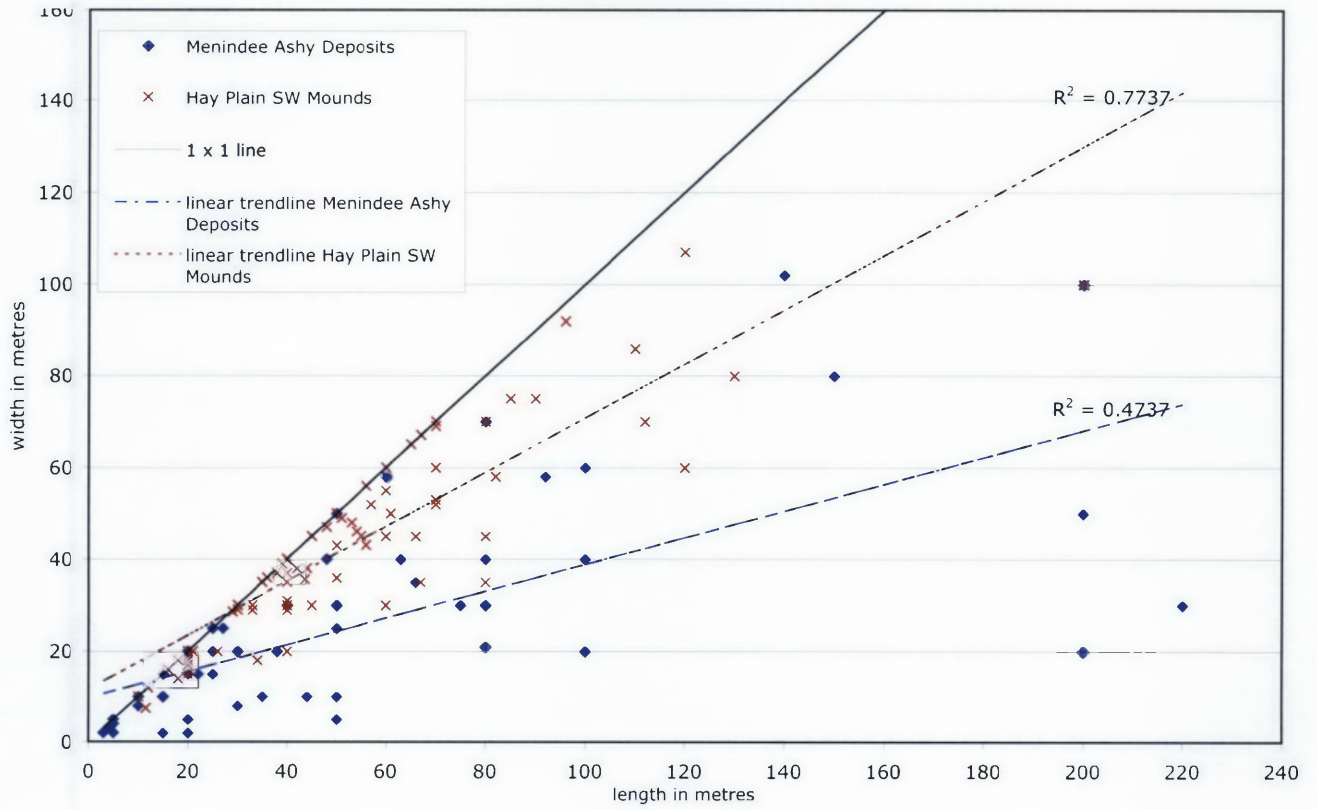

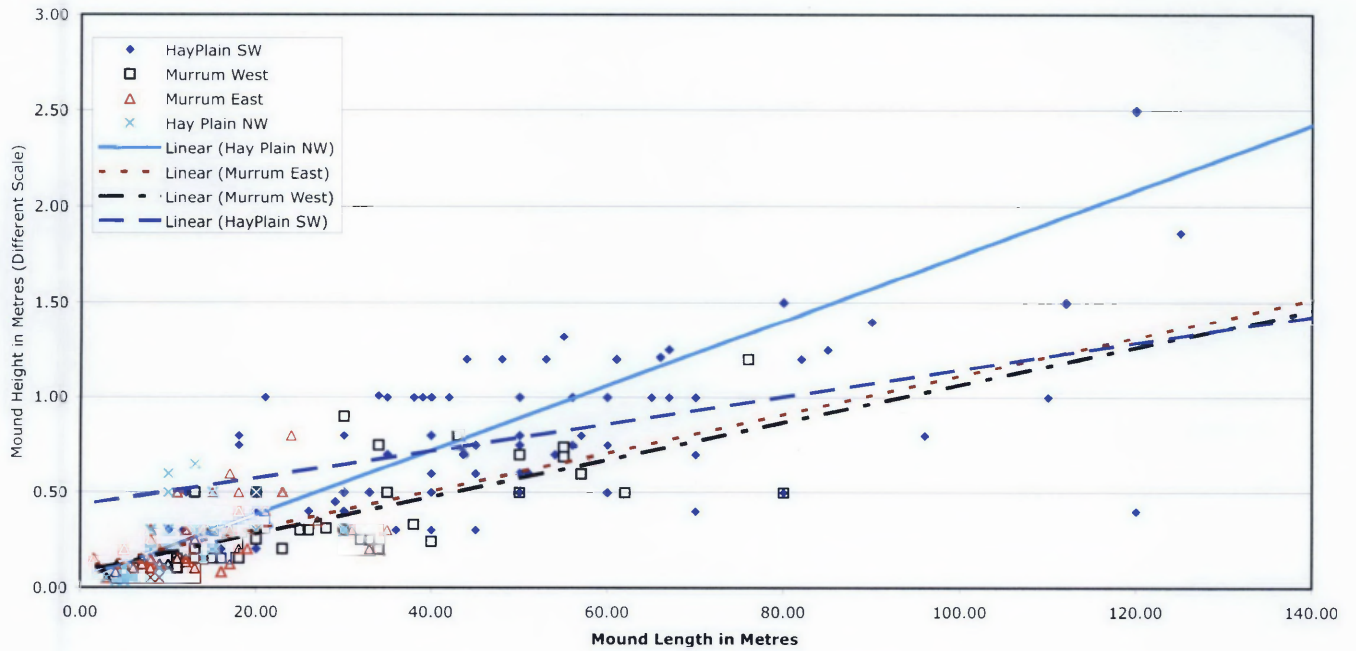**Figure 8.4 Hay Plain Mounds Length x Height (N=188)**

Figure 8.5 Hay Plain South West and Menindee Ashy Deposits Length x Height Above Ground
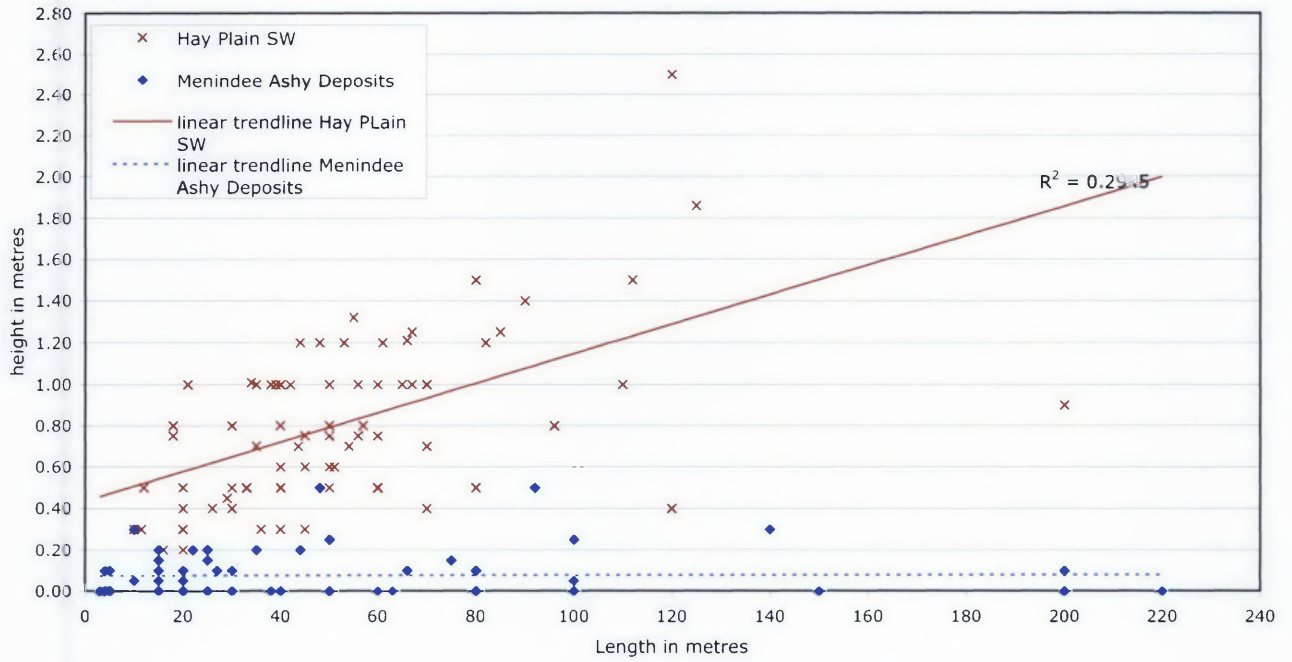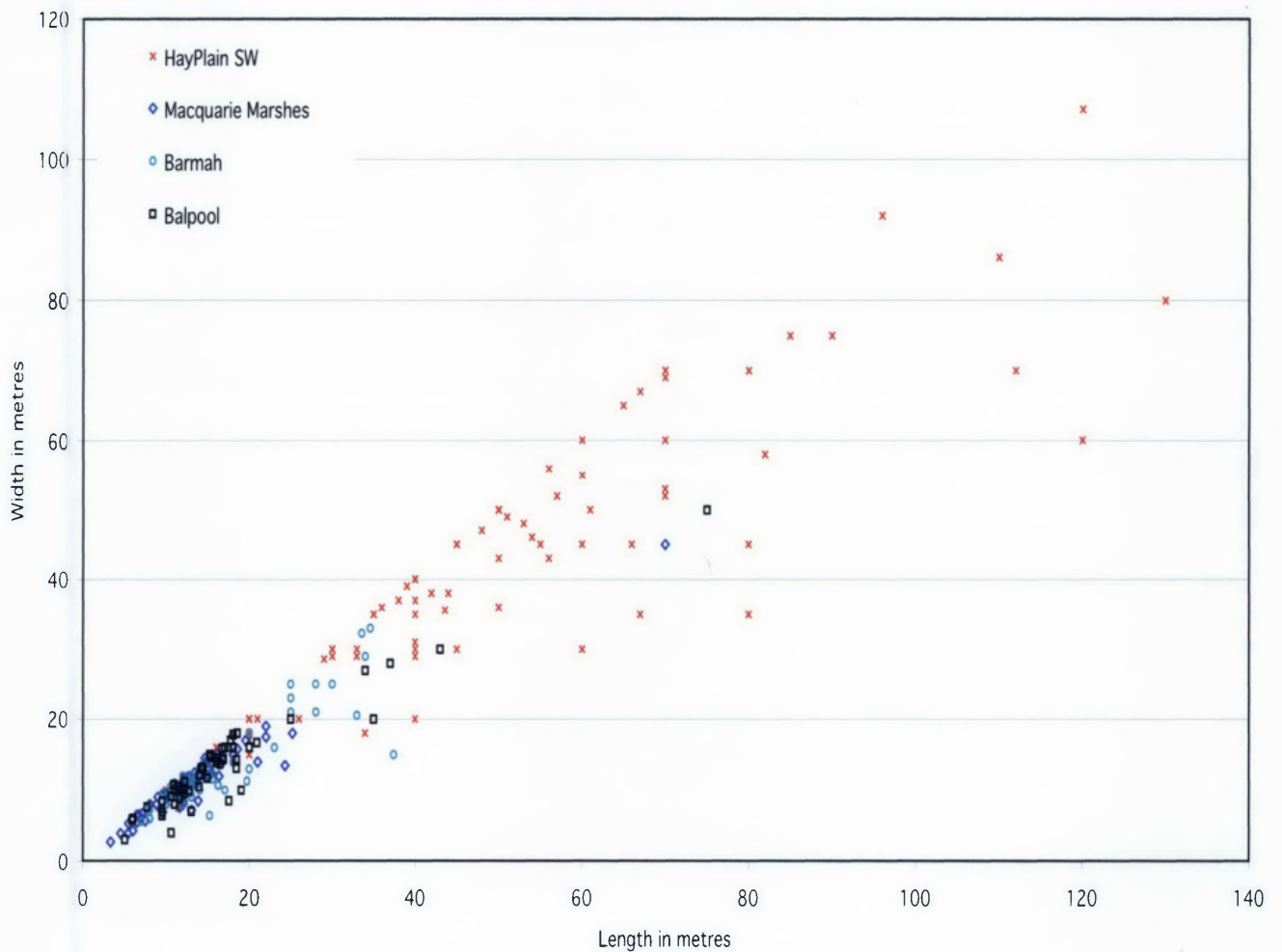

Figure 8.6 Mound Length x Width for Hay Plain South West and Comparative Sample Areas
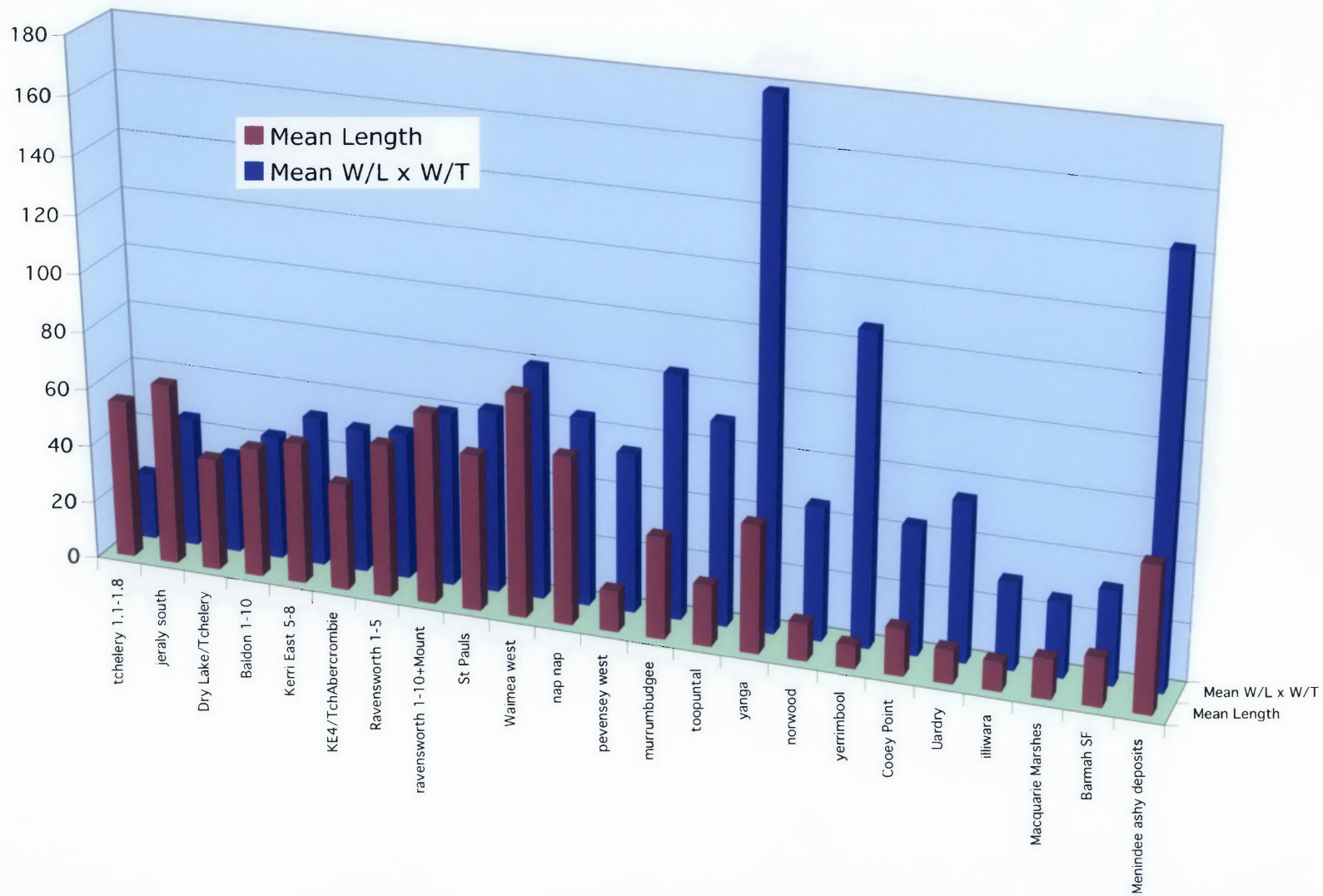
Figure 8.7 Average Moundedness Index & Average Length for Mound Clusters and Menindee Lakes Ashy Deposits (Table 8.2)

8.2.2 Mound Sizes

Mound size was also examined to determine if this is another attribute of mound 'style'. The Hay Plain South West has the mounds with the largest length/width, and the highest mounds, compared to the other Hay Plain areas and the other groups considered including the Macquarie Marshes, the Barmah State Forest and Balpool (Figure 8.2, 8.3, 8.6, 8.7, 8.8, 8.9 and Table 8.1, 8.2). The Lowbidgee has the next largest and highest mounds. The Hay Plain Southwest sample has 42% of mounds with height of 1 metre or more, with only one other mound in the Hay Plain samples (at Nap Nap on the Lowbidgee) also being 1 metre or more high (Figure 8.8b). Therefore 33 out of 34 Hay Plain mounds in the database one metre or more high are located on the Hay Plain Southwest. There is a similar trend for mound lengths, with all six Hay Plain mounds with length over 100 metres located on the Hay Plain Southwest. A further 42% (n=35) of mounds on the Hay Plain Southwest are between 50-100 metres in length, compared to eight on the Lowbidgee, and none on the Hay Plain Northwest or Murrumbidgee River East (Figure 8.8a). These figures establish that the largest mounds (length & height) on the Hay Plain are on the Hay Plain Southwest, followed by the adjacent Lowbidgee. The Hay Plain Northwest and Murrumbidgee River East samples contain mounds that are both smaller and lower as are the mounds at Barmah, Balpool and Macquarie Marshes. Menindee Lakes Ashy Deposits stand out as having large length x width, but generally low in height. Figure 8.8c summarises the relationship between moundedness, width and length for the areas in Table 8.1. The Hay Plain Southwest has the longest and widest mounds, and a relatively good Moundedness Index. Lowbidgee are smaller and less mounded, the other mound groups are much smaller again. The Macquarie Marshes and Barmah are more mounded than the Murrumbidgee East or Hay Plain Northwest, despite their similar sized bases. The Menindee Lakes Ashy Deposits stand out as being large deposits but lacking in roundness and moundness.

Comparing other areas, Balpool (Edmonds & Long 1998) has one mound over 50 metres in length out of a sample of 51 (they did not estimate mound height). The Barmah State Forest sample of 56 mounds does not have any mounds over 50 metres in length, but it has 17 mounds between 50cm and 70cm high (Bonhomme 1990a). Macquarie Marshes sample has one mound over 50 metres in length out of a sample of 61, and 14 mounds between 50cm and 76cm in height (Balme & Beck 1996).

Table 8.1 Summary of Mound and Ashy Deposit Size & Shape by Area

Location of Sample Area	Sample size	Mean mound length m	Mounds ≥100m length	Mounds ≥50m <100m length	Mounds <50m length	Mean mound width m	Mean mound height m	Mounds ≥1m high	Mounds ≥50 cm <1m high	W/L x W/T
Hay Plain SW	79	53	8%	42%	50%	43	.81	42%	41%	50
Lowbidgee	35	32	0	23%	77%	27	.39	3%	37%	71
Murrumbidgee East	49	13	0	0	100%	10	.23	0	12%	51
Hay Plain NW	39	12	0	0	100%	11	.24	0	18%	65
Macquarie Marshes	61	14	0	2%	98%	11	.39	0	26%	26
Barmah	56	17	0	0	100%	14	.38	0	32%	32
Balpool	51	17	0	2%	98%	14	n/a	N/a	N/a	N/a
Menindee ashy deposits	62	50	13%	15%	72%	24	.08	n/a	3%	144

Table 8.2 Summary of Hay Plain Mound Cluster Average Length and Moundedness Index (W/L x W/T), Plus Comparative Areas Barmah, Macquarie Marshes and Menindee

Major Area	Mound Cluster	Mean Moundedness W/L x W/T	Mean Length in Metres	Sample Size
Hay Plain Southwest	Tchelery 1.1-1.8	23.00	55	6
"	Jeraly South	45.00	63	6
"	Dry Lake/Tchelery	34	39	7
"	Baldon 1-10	43.00	45	15
"	Kerri East 5-8	52.00	49	8
"	KE4/Tchelery/Abercrombie	50	37	5
"	Ravensworth 1-5	51.00	53	5
"	Ravensworth 1-10+Mount	60.00	66	14
"	St Pauls	63.00	54	13
Lowbidgee	Waimea West	80.00	77	3
"	Nap Nap	65.00	58	7
"	Pevensey West	55.00	14	6
"	Murrumbudgee	84.00	35	12
"	Toopuntal	70.00	21	10
"	Yanga	179.00	44	3
Hay Plain Northwest	Norwood	46.00	13	27
"	Yerrimbool	107.00	8	12
Murrumbidgee East	Cooey Point	44.00	16.3	15
"	Uardry	55.00	11.60	22
"	Illiwara	30.00	10	12
Macquarie Marshes		26.00	13.7	61
Barmah SF		32.00	16.7	56
Menindee Ashy Deposits		144.00	50	62
Total sample number				387

Figure 8.8a   Ratio of Average Mound Lengths Compiled by Area Shown in Table 8.1
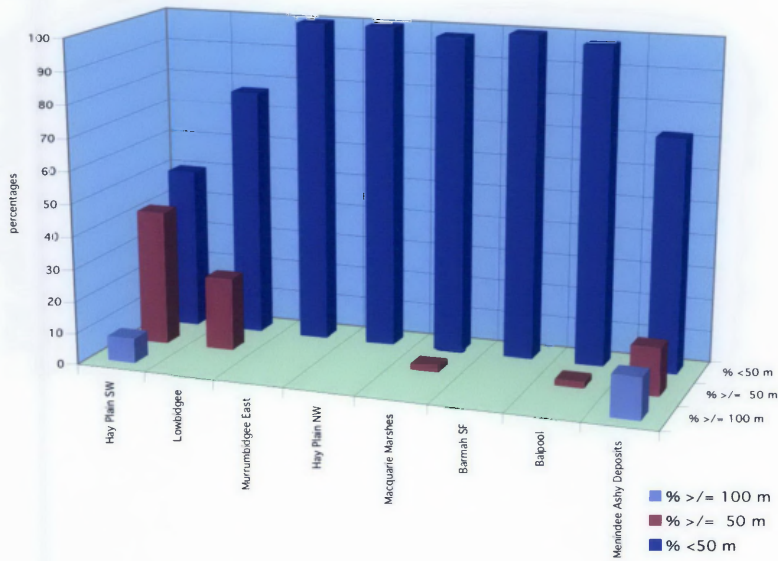

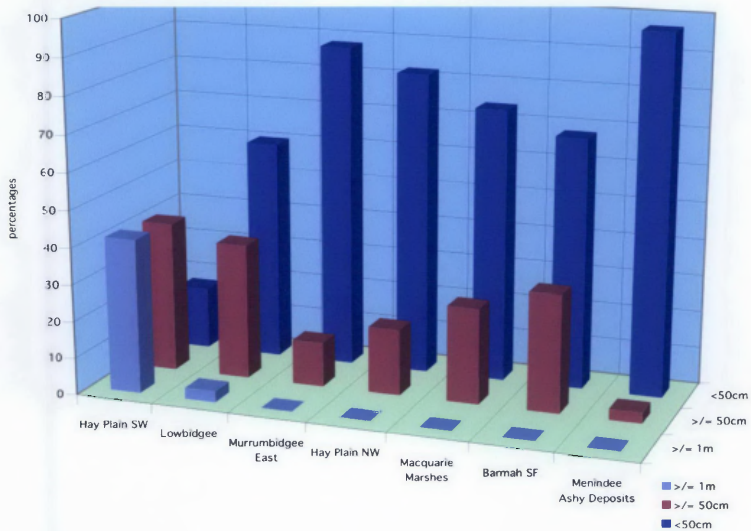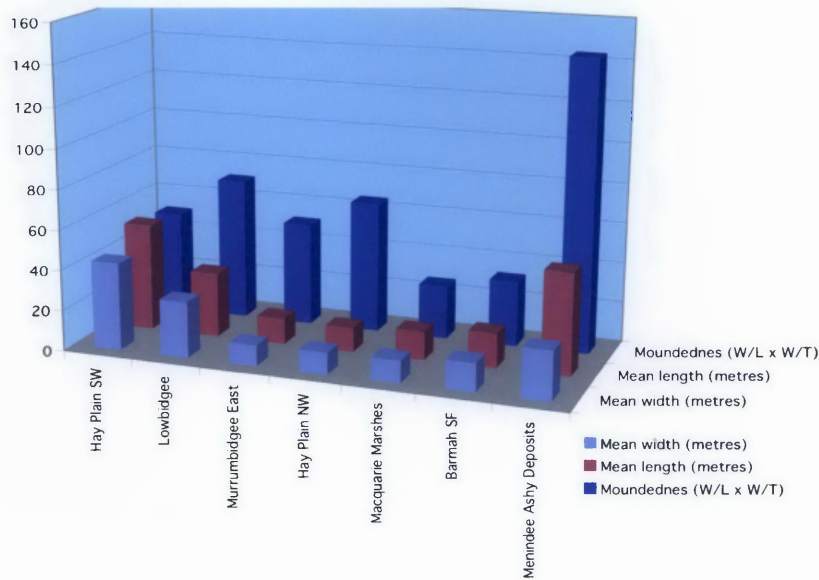Figure 8.8b Ratio of Average Mound Heights Compiled by Area Shown in Table 8.1

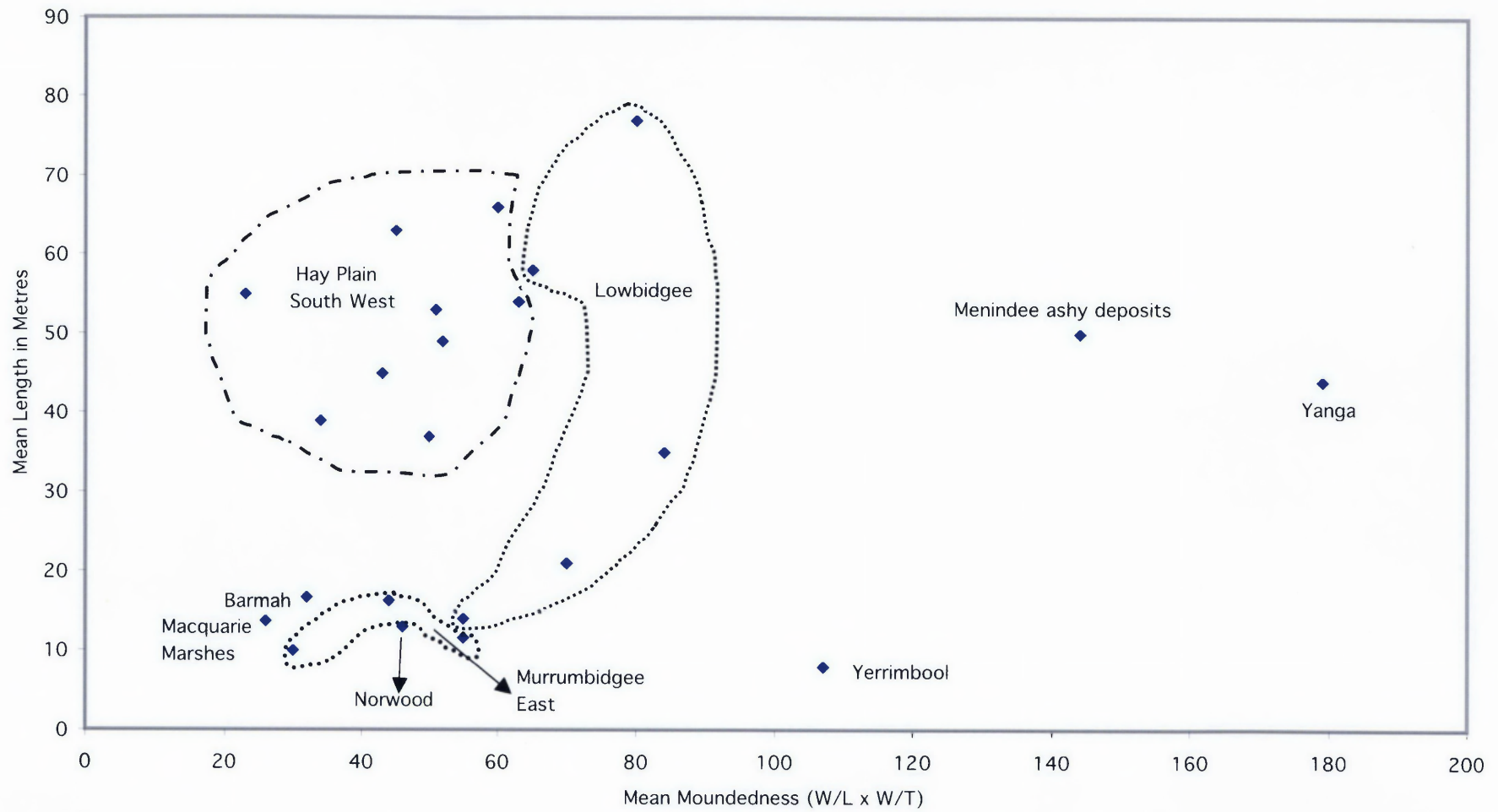Figure 8.8c Average Length x Width x Moundedness Index Compiled by Area Shown in Table 8.1

Figure 8.9 Mean Length x Mean Moundedness Compiled from Data in Table 8.2

A scattergram of moundedness x length (Figure 8.9) shows discrete populations of mounds on the Hay Plain Southwest (mounded and large), Lowbidgee (small to large and less mounded) and Murrumbidgee East (very small and mounded). Menindee Ashy Deposits, Yerrimbool, Yanga lack moundedness.

8.2.3 Mound Cluster Sizes

Mounds tend to cluster but they may also spread out singularly over large areas, thus forming two distinct and contrasting spatial distribution patterns. There seems to be at least two different factors driving this dual occupation strategy. In the Hay Plain Southwest large clusters of mounds occur around the more delineated swamps, or on high ridges overlooking flooded country, with cluster sizes ranging from 3 to 21. Some large clusters occur around swamps, where the shape of the swamp may result in a circular cluster shape, or a semi-circular to crescentic shape if the cluster occurs only on one side of a swamp. Other groups occur on more linear features, such as the group on Ita Lake inlet Creek, or the Kerri East 1 group perched on the edge of a high sandy palaeochannel feature overlooking swamps. Table 8.3 shows that clusters of over 10 mounds occur on all the major landforms except the Hay Plain Southeast which has few mounds, and of course the Hay Plain Northeast which has no mounds recorded. Thus large clusters can occur on all the sections of the Hay Plain that have significant numbers of mounds, and therefore cluster size is not an ideal attribute to delineate mound 'style' (but see 8.6.2). The mounds that occur singularly tend to be spread out away from the more delineated swamps, larger lagoons and river channels. On the Hay Plain Southwest mounds are spread out between the larger swamps, and are located on slightly higher palaeochannel creeks levees or sandy islands on floodways. These latter locations may have had less wetland food resources than the more differentiated swamps, or a different resource. The spread-out or non-clustered mounds are not necessarily smaller than the mounds around swamps, which corroborates that size is related to style, but not cluster size.

Table 8. 3 Mound Cluster Sizes

Location	Cluster location	Number of mounds
Hay Plain Southwest	Baldon Swamp S	19
	Baldon Swamp N	6
	Baldon Irrigation1-3	3
	Kerri East 1	21
	Kerri East 5-8	6

	Lintotts Swamp	12
	Tchelery 1-3	8
	Dry Lake	11
	Ravensworth Lakes	11
	Jeraly South/ St Pauls Swamp	18
	St Pauls 2	2
	St Pauls 3	3
Lachlan	Ita Lake Creek	20
	McFarlanes SF	2
Hay Plain Northwest	Toopuntal 5 (Cumbungi Swamp)	7
	Yerrimbool	12
Hay Plain Southeast	South Burrabogie	2
Hay Plain Northeast	none	none
Lowbidgee	Murrumbudgee	12
	Nap Nap 4	12
	Toopuntal 1	5
	Toocimbie	
	Pevensy West	6
	Waimea West Corner	3
Murrumbidgee East	Cooey Point Lagoon (Klaver 98)	38
	Uardy Stock Reserve (Klaver98)	11
	Illilwara	9
	Barman SF (Klaver 1990)	20
	Gre Gre	2

8.2.4 Stylish Mounds

The previous section has established that mounds have 'style', and that size, roundness and moundedness are attributes that reflect cultural processes. For example, the Hay Plain Southwest mounds are built on a template that differs from other areas. The template is for very large, round and high domed shaped mounds (photos 29, 30, 31). The exceptions are the large oval mounds (photos 7,14), but there is evidence that these are formed from two round domed mounds that were deliberately joined together rather than accidentally coalesced. The reason for this is unclear; for example it may represent a stylistic change in template or the deliberate preparation of a larger area for camping on. In the Hay Plain Southwest the size of mounds is not linked to the size of the swamp or floodout feature, or to cluster size, suggesting that size of mound is not directly related to the size of resource but is a style attribute. The Lowbidgee has a different mound template, with large, round

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but platform shaped mounds being common, as recorded at Murrumbudgee (photo 34). The round base has steep but low sides and a flattish top, unlike the domed mounds on the plain to the south. Other areas of the Hay Plain including the Hay Plain Northwest, Lachlan and the Murrumbidgee East, tend to have smaller mounds although they often occur in large clusters. These mounds tend to be round and not oval or elongate. This suggests that different areas have different 'styles' or templates of mound size and shape, but that cluster size is not a 'style' attribute.

The comparison between Hay Plain and Menindee indicates that the Menindee ashy deposits, and the Lachlan River ashy deposits, grew from similar material and cooking processes to the Hay Plain mounds, but the desire to shape and mound was lacking. Thus the people at Menindee had a different template to the Hay Plain people when they were making ovens and disposing of oven waste. This is extremely significant because it strongly suggests that the Hay Plain people did not have to make mounds with the characteristic roundedness and moundedness, but they desired to make such constructed features for reasons other than purely technological or economic ones. Thus the attributes of roundness and moundedness displayed by the Hay Plain mounds form 'redundant patterns' from a purely technological aspect and it can therefore be inferred that they reflect other cultural processes (Dobres 1995:55).

The formation of high shell mounds on the northern Australian coastline have been explained as resulting from 'environmental factors governing the nucleation of human habitation', that is mounds occur when there is only a small space to camp on and linear middens occur when there is room to stretch out (Cribb 1996:157). However, on the Hay Plain the patterns of mound building cannot be explained by the lack of suitable ground to camp on. While mounds tend to be built on slightly higher and sandier palaeochannel geomorphological features, there is plenty of unused space available. If space was a limiting factor, such higher sandier features would be covered with a layer similar to the Menindee ashy deposits. To further confound this hypothesis, mounds are sometimes built on the vast areas of low-lying 'black soil' off the palaeochannel features.

The patterning of mound roundness and moundedness, size, cluster size, cluster shape point to a complex patterning which cannot be fully interpreted at this stage because a lack of dates precludes discussion on which mounds within groups and which groups were contemporaneous. The exceptions are the dated Tchelery 1 and

Ravensworth 3 mounds. The almost identical basal and top dates of these mounds suggest that the series of very large mounds found in the Hay Plain southwest may be all contemporaneous. This is backed up by the similar date obtained by Pardoe for a burial associated with mounds in the same area (Pardoe 1995:707). Another possible indication of contemporanity is provided by the existence of similar microblade technology on mounds in this area as well as throughout the excavated mounds, which suggests that some of the medium sized mounds in this area may be contemporaneous with the very large mounds. This may indicate that the distinctive template for mound style seen on the Hay Plain Southwest changed over time as the focus for mound building moved into the adjacent Lowbidgee and other sections of the Hay Plain.

8.3. ELEMENTS AND COMPOSITION OF THE CONSTRUCTED LANDSCAPE

8.3.1 Mounds as Constructed Landscape Features

During the 1836 exploration of the Lachlan, Murrumbidgee and Murray Rivers, Mitchell noted and described mounds on the Hay Plain, possibly the first written description of mounds in Australia.

> One artificial feature, not observed by me in other places, distinguishes the localities principally frequented by the natives, and consists in the lofty mounds of burnt clay, or ashes used by them in cooking. The common process of natives in dressing their provisions, is to lay the food between layers of heated stones; but here, where there are no stones, the calcined clay seems to answer the same purpose, and becomes better or harder, the more it is used. Hence the accumulation of heaps resembling small hills. Some of them were so very ancient, as to be surrounded by circles of lofty trees; others, long abandoned, were half worn away by the river, which, in the course of ages, had so far changed its bed, that the burnt ashes reached out to mid-channel; others, now very remote from the river, had large trees growing out of them. I saw the first of these heaps, when near the end of the last day's journey along the Lachlan, where this river partook of the reedy character of the Murrumbidgee. I understood that the 'Balyan' or bulrush-root, which is the chief food of the natives there, is prepared in those kilns, when a family or tribe are together. I ascertained the name of the place to be Weyeba... (Mitchell 1839 Vol II: 80-81).
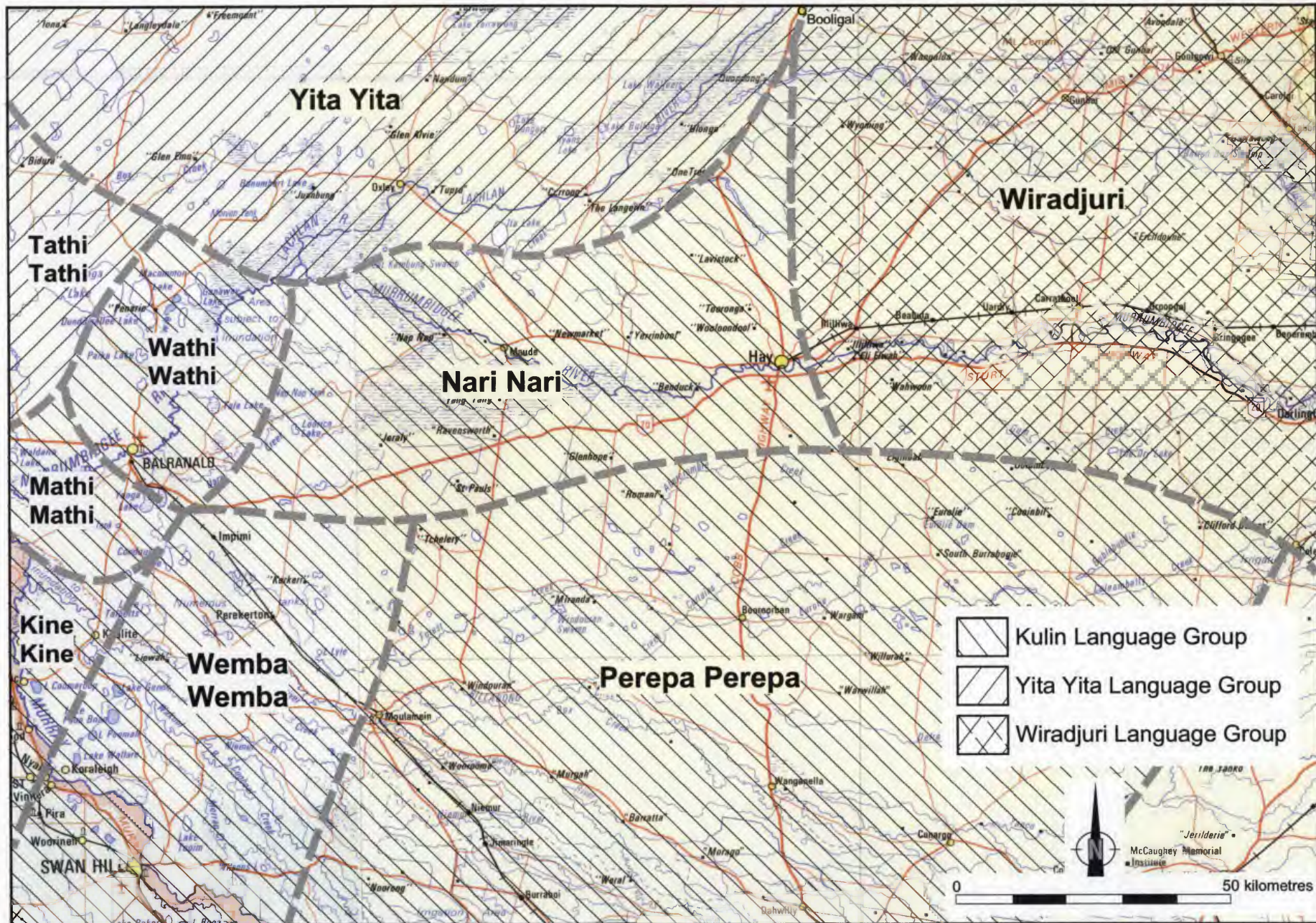
Figure 8.10: Aboriginal Languges of the Hay Plain

Weyeba is located just below the junction of the Lachlan and Murrumbidgee Rivers close to the location of Redbank Weir, and mounds are known to be located on Yanga Station, directly across the river from where Mitchell made this observation.

We were unable to access this station during the 2001 survey despite requests from the survey team and the Balranald LALC. However, mounds were recorded on the eastern side of Yanga Station on Nap Nap and Toopuntal (Pardoe & Martin 2001). Unfortunately this is the only description given by Mitchell of mounds in the Hay area. However, he continues to describe mounds as he travelled south along the Murray River and its tributaries. These descriptions are important because he makes the point that the mounds form a characteristic 'artificial' landscape feature that he associates with the reed beds of the Murrumbidgee/Lachlan junction, the Murray, and its tributaries. On the Murray near Toolyebuc-Swan Hill (about 40km south of the Hay Plain):

> reeds covered a vast region before us. They grew everywhere, even under the trees, and extended back from the channel of the river as far as I could see... The lofty ash-hills of the natives, used chiefly for roasting the "balyan"(or bulrush), a root found only in such places, again appeared in great numbers (Mitchell 1839 Vol II:134)

To the south of the Murray towards Mt Hope, mounds were found around lakes;

> On the western shore, we saw the remains of large native ash-hills. They were old and overgrown with bushes, but they proved that this lake had once contained muscles, and the balyan or bulrush, a root eaten by these natives, and cooked in earth ovens such as these (Mitchell 1839 Vol II:147).

James Kirby, describes his initial view of the reed beds, footpaths and mounds on the Murray River below Swan Hill, about 40 km south of the Hay Plain, in 1845-6;

> The first indication we saw of blacks was footpaths which they made going up and down the riverside; and the second was here and there about a mile apart large mounds of earth thrown up. On examining these mounds we found steam coming out of them, and on looking still further into them, discovered they were ovens for cooking the compung (the root of the bulrush which grows in the reed beds) (Kirby 1895 :28).

The eye-witness accounts of Mitchell and Kirby associate the mounds with reed beds and cooking of *Typha*. Mitchell uses the Wiradjuri word *balyan* and Kirby uses the Kulin language *compung,* which is used today as the common name 'cumbungi'. Mitchell emphasises the large size and antiquity of many of the mounds. Kirby indicates that the mounds had a definite spatial patterning, being 'about a mile apart', and he 'examined' steaming mounds and 'discovered' the ovens within them. As with many later descriptions, there was recognition of a similarity between the 'ancient' and 'lofty' 'artificial' mounds of the Riverine Plain and landscape monuments in Europe, an acknowledgement unusual for the time of historical processes and inscription of landscape being characteristic of Australia as well as Europe.

Mounds on the Riverine Plain also formed landscape features that actually provided habitats for animals that would have been otherwise unable to live on large areas of the hard clay soils of the plains. Krefft described that in the 1850s bilbies tunnelled deep into mounds and were:

> found in pairs over the wide plains... As this 'Rabbit Rat' often prefers entering the ground on a hill side, and as hills, even of a very slight elevation, are often scarce on these extensive plains, it will sometimes happen, that the Peragalea takes advantage of the mound raised upon a departed black-fellows grave, providing for itself a habitation beneath the natives weary bones. ...if it takes advantage of the 'mound" it is only for convenience sake ... Its flesh is very good eating... The natives seldom unearth the animal; the holes being very deep, and often found uninhabited (Krefft 1866b :15).

The constructed landscape of mounds and graves actually provided new habitats for food resources. This is mirrored by the fact that rabbits utilise mounds in exactly the same way, although they dig in from above and do not go so deeply into the mound. The rabbits and the 'control' of rabbits currently causes more damage to mounds than any other factor. This makes one suspect that much of the mixing in mounds may be due to Aboriginal people digging out bilbies and other species that may have lived in the mounds, a process that would have simply transformed after the rabbit invasion. Therefore the bigger mounds expanded the habitat available for species that were important food items, and the actual building up of mounds may have been seen as a way to improve the hunting in the areas around the swamps. This description is likely to refer to all mounds not only those constructed for burials and explains the presence of an *in-situ* bilby skeleton in the Tchelery excavation, and numerous

tunnels and coprolites in both the Ravensworth and Tchelery excavations. Bones and teeth from the excavations indicate that bilbies, rats, reptiles and possibly bandicoots inhabited these big mounds, possibly co-existing with humans and supplying food at certain times. Alternatively the mounds were inhabited by these animals after being abandoned except for later use for graves, thus the digging out of the animals may explain the disturbed stratigraphy. On the Hay Plain during the 1880s, rabbits claimed the mounds and 'found readymade homes and soon ousted the bilbee (sic)' (Nixson 1950:8).

8.3.2 Burials as Constructed Landscape Features

A unique aspect of the Hay Plain is that many burials are located on the plains away from features such as lakes and rivers and away from any high ground. This was first noticed by Mitchell in 1836 but only brought to the attention of archaeologists in 1993-1995 by Ian Woods and Terry Baulsch of the Hay LALC during the early stages Hay Plain burial protection programme. On an anabranch of the Lachlan near Booligal Mitchell (1839:51-52) described a newly raised burial mound on flat ground which was clearly subject to flooding. He perceptively points out that while the Darling River people always buried their people on high ground, the people on this part of the Lachlan 'could find no heights within their territory' and had to make do with 'the flats'.

A characteristic form of grave was seen on the Hay Plain, and on the Lachlan River just upstream from Bidyengoga (Oxley) Mitchell notes;

> On a corner of the plain, just as we approached the land of reedy hollows, I perceived, at some distance, a large, lonely hut... it was closed on every side, the materials consisting of poles and large sheets of bark, and that it stood in the centre of a plot of bare earth of considerable extent, but enclosed by three small ridges, the surface within the area having been made very level and smooth. I had little doubt, that this was a tomb, ... the floor was covered with a bed of rushes, which had been recently occupied...this bed covered a grave...the rushes within that solitary tomb, were actually the nightly bed of some near relative or friend of the deceased, (probably a brother), and...the body was thus watched and attended... until no flesh remains on the bones : "and then he yan (i.e. goes) away"(Mitchell 1839:70-71).

Mitchell includes a simplified plan of the ridges and burial hut ('tomb') in his

published work (Mitchell 1839 Vol II:71), however, his detailed original drawing of the burial hut and ridges is located in the Mitchell Library, Figure 8.11.

Similar graves were also found near the lower end of the Murrumbidgee;

> On the rising ground near our camp, were several graves, all enclosed in separate parterres of exactly the same remarkable double or triple ridges, as those first seen on the lower part of the Lachlan. There were three of these parterres all lying due east and west. On one, evidently the most recent, the ashes of a hut appeared over the grave. On another, which contained two graves, (one of a small child) logs of wood mixed with long grass were neatly piled, transversely; and in the third, which was so ancient that the enclosing were barely visible, the grave had sunk into a grassy hollow. I understood from the widow that such tombs were made for men and boys only, and that the ashes over the most recent one were the remains of the hut, which had been burnt and abandoned, after the murder of the person, whose body was buried beneath, had been avenged (Mitchell 1839:87-88).

In 1846 Robinson saw three similar graves with earth rings and huts at Tala Lake (Figure 8.12);

> Grave... north end of lake...ancient grave, raised ridges, bark hut five feet high, four feet wide made of bark and timber, hollow inside, wooden shield ...Visited second grave with two bodies, made in same manner but no bark hut only old wood laid on grave ... [Another] Ancient grave... (Clark 2000:32)

Krefft's 1856-57 watercolour of two graves on Hamilton's station, lower Murrumbidgee River, shows two burial huts composed of reeds placed on a mound and surrounded by a fence of branches (Figure 8.13). Krefft (1866:363) comments that the huts were made from bark further up the Murray, but reeds replaced bark near the Murrumbidgee junction, and further down the Murray the reed huts were enclosed with nets. A second watercolour shows a substantial reed hut wrapped in a net (Mitchell Library PDX9:23).

Figure 8.12 Mitchell's 1836 Sketch of a Burial on the Hay Plain (Mitchell Library Picture File DG-A6)

Figure 8.13 Robinson's Sketch of a Grave at Tala Lake, Murrumbidgee River (Clark 2000)
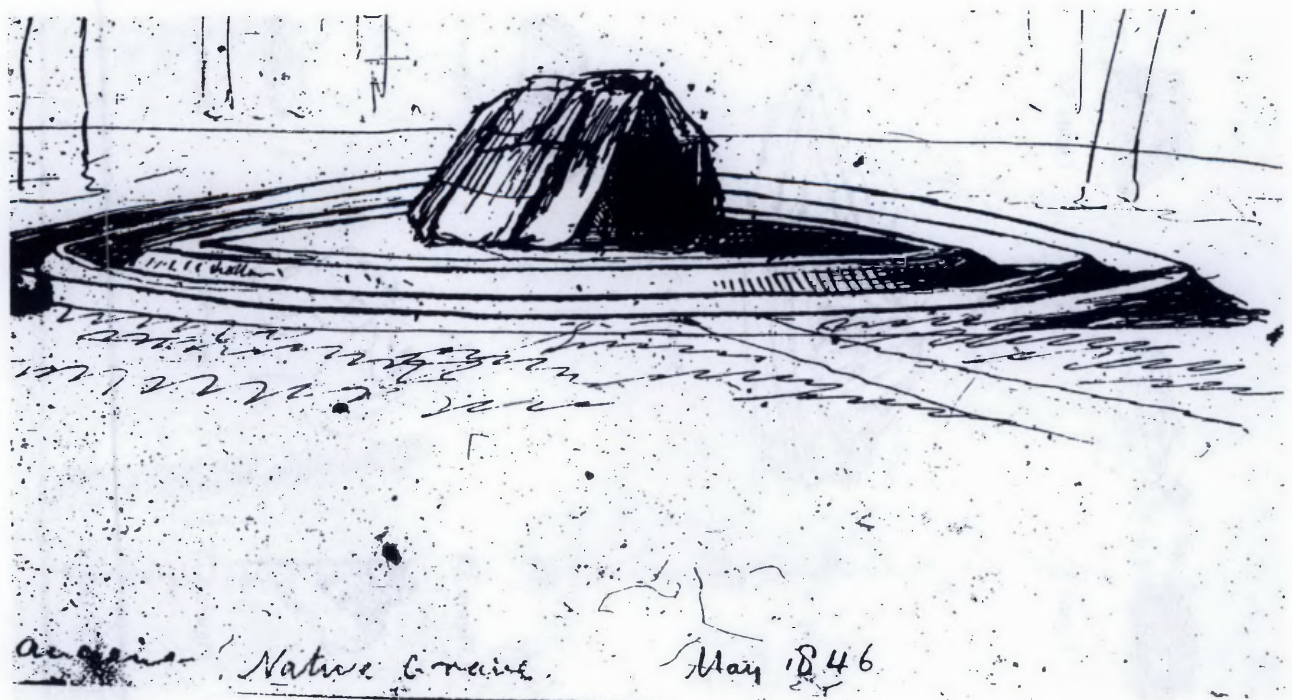
Figure 8.14 Krefft's 1856-7 Watercolour of a 'native grave' on the Lower Murrumbidgee (Mitchell Library Picture File PXD9)

8.3.3. Paths as Constructed Landscape Features

Paths, notably on the western section of the Hay Plain, were substantial permanent physical features reflecting the large population but also inscribing the landscape with meaning. While finding little indication of people on the mid to upper Murrumbidgee, as he approached the Murrumbidgee-Lachlan junction Sturt (1833: 74) comments 'from the number and size of the paths that led from the river, in various directions across the plain, I was led to conclude, that, at certain seasons, it is hereabouts numerously frequented'. Mitchell (1839 Vol II: 80-81) gives a similar description as he approached the Murrumbidgee-Lachlan junction from the mid Lachlan to upper Lachlan in 1836; 'Whatever reeds or polygonum might be outside, a certain space along the river, was almost everywhere clear, probably from its constant occupation by the natives'. Near Swan Hill on the Murray River the first pastoralists commented that in 1846; 'The first indication we saw of blacks was footpaths which they made going up and down the riverside' (Kirby 1895:28). Paths mapped out the landscape and linked the significant elements, they were also lawful or designated ways to move around without offending.

8.3.4 Weirs, Dams, Fish Traps

An ancestral story (8.4.1) describes the origin of a stone feature in Murrumbidgee just below Balranald, this has also been recorded through oral history by NSW Department of Environment & Conservation as a fish trap suggesting some rocks may have been placed deliberately. Klaver (1998) describes stone fish-traps at Narrandera and Oxley (1820) describes another trap on the upper Lachlan. However, the Hay Plain is without raw material required for the construction of stone fish-traps. Most descriptions are of stake or brush fish-traps or 'weirs' located in creeks and channels. These structures operated as water ran back into the river as floodwaters receded:

> On the Murray and Murrumbidgee numbers of weirs constructed of saplings were built beside the river bank across blind gullies, an opening being left about the middle, through which, when the river was swollen by reason of the melting snow on the mountains, the fish entered into the still water; the entrance having being closed, they could be easily captured (Norton 1907:102).

Kirby (1894:35) describes the Wemba Wemba people making fences or weirs in the creeks on the Murray River floodplain near Swan Hill, just to the south of the Hay

Plain: 'a fence across these channels of thin sticks stuck upright and close enough to prevent the fish going through, but leaving a space at one side'. Men owned such constructed infrastructure: 'fishing weirs on the numerous channels which conducted the flood-waters back into the Murray were owned by individuals, and descended to their heirs' (Curr 1883:111). Hobler (1992:316) described in 1845-6 fishing with nets in the creeks at Nap Nap on the Murrumbidgee-Lachlan junction 'Perch ....caught by our favourite native who takes them in large quantities in the creeks up which the flood water runs by setting a net across'.

Descriptions of earthen dams are found in the early literature only rarely, but this may reflect the fact that they would have to be renewed each season and even if seen by the earliest white commentators, they may not have been recognised. Dams may have been used to prevent floodwaters from flowing back into the Murray River (Beveridge 1889, Kirby 1894:35), thus creating highly productive artificial swamp ecosystems. Sturt describes a dam constructed on the lower Darling River Anabranch to hold back water: 'they had made a weir, through the boughs of which the current was running like a sluice; but the further progress of the floods was stopped by a bank that had been gradually thrown up athwart the channel' (Sturt 1849:105).

8.3.5 'Bora rings' or Ceremonial Earth Rings

Mathews (1897:115-7) describes in detail a ceremony that was held between Hay and Carrathool which utilized a 'large ring' with a 'raised earthen embankment'. In addition a second space was levelled and mounds of earth created on it, a pathway linked the two areas and figures formed from heaped earth on the ground. A large standing figurine was formed from mud. Once again a constructed landscape using earth as the material was evident at ceremonial grounds, and there is a similarity in 'motif' of earth ridge enclosures and earth mounds. At least one complex of 'Bora rings' are still in existence in the Hay area (AHIMS).

8.3.6. Wells and Reservoirs

Pardoe and Martin (2001) describe a remarkable series of ovens and two small mounds and artefact scatters located in an area to the south-east of Hay (Map 1), a long way from any water source except for rainwater that might stay on a scalded area for a few days. However, the landowners of South Burrabogie described a feature found adjacent to the sites as a 'spring' that had supplied water to the station

until recently. A closer examination of the area showed that it was in fact an excavated reservoir that cleverly caught the run off from a slight slope in the country. Although partly filled in now it is definitely man-made and depends on the sloping hard red soil for runoff. The density of archaeological material in the area very strongly indicates that this feature began life as an Aboriginal water reservoir.

Jan Klaver recorded a similar feature in a survey on Cedar Grove station 15 km south of Hay. On 'flat plains country' with 'low sand features and extensive scalded areas' she recorded five ovens exposed on an access track and artefacts 'scattered across an extensive ridged and scalded area immediately east of the ovens'. Exposure of ovens was poor and restricted to the access track, and there may be more in the vicinity. Local information indicated that there was a 'soak' in the area, and this was located approximately 500m north of the ovens, a 'low depression amidst sand sheets, now used as a rubbish dump' (Klaver 1995). The description of the landforms, the 'soak' and the type of archaeological material is very similar to the South Burrabogie 'spring'. This suggests that the Hay Plain South East may have a unique type of constructed landscape feature focusing on the excavation of large water reservoirs to catch rainwater runoff from higher hard red country.

To the north of the Murrumbidgee River, the inhabitants of the 'extensive plains...deepen the hollow places in the Lignum plains, and depend altogether on surface water' (Hobler 1992:391). While living on the northern side of the Lower Lachlan in Ngiyampaa country, Cameron (1905:5) 'frequently met with small tanks, that they must have excavated with infinite labour, as the tools at their command were very badly suited for the purpose. However, the substantial remains of the 'tanks' on the Hay Plain South and the surrounding concentrated evidence of occupation indicates that the reservoirs in this area were larger and more permanent than the ones to the very dry country to the north of the Lachlan.

8.3.7 Ring Trees and Scarred Trees

Carved Trees are not recorded from the Hay Plain, however, there is a significant category of tree 'sculpting' know as ring trees. Two branches of a young tree were tied into a circular knot that remained as a distinctive 'ring' as the tree grew older. These trees are known from the Murrumbidgee River and are said to mark boundaries of small land owning groups (Hay Local Aboriginal Land Council). Scarred trees including canoe trees are still a significant cultural feature along the

Murrumbidgee and Lachlan Rivers (Pardoe & Martin 2001, Klaver 1998). Ethnographic evidence suggests that trees with the right bend and bark for canoes were curated and 'owned' by certain men: 'any gum tree that had a bend in its trunk of the proper shape for making a canoe of its bark was highly prized; and if any of the tribe were to injure that tree, they would, if found out, be punished by death' (Kirby 1894:34-5). Ritually scarred trees marking burials have been recorded on the Edwards River on the southern edge of the Hay Plain (Pardoe & Martin 2001). Many trees had bark removed for the drying of possum skins, and for dishes and shields. Thus in the areas along the rivers people could 'read' the trees which informed people about land tenure, activities and resources.

8.3.8 Relationships between Elements of the Constructed Landscape

The constructed features described above formed relationships that also communicated information about the landscape. The elements constructed from earth, including 'oven' mounds, burial mounds and earth rings, the paths, the bora rings and sculptures, the reservoirs, and possibly earth walled dams, are all related by a common material and the way the material is moulded or sculpted. All these features are made by the excavation of earth from the land and deliberate shaping and packing down. Ethnography indicates that some of these features were made by men (bora rings), some may have been a joint effort (burials), and others made by the efforts of women (mounds). Kirby (1895:76) describes a group of women finishing off the earth works on a burial on the Murray near Swan Hill; 'when the grave is finished the lubras will walk or shuffle over it with their feet together as closely as possible' and they were also in charge of sweeping the area every day and inspecting it for tracks.

Some features mirror each other in form or shape template, and although initially appear to be different categories (oven mounds versus burial mounds or burial ridges versus bora rings), one may represent a direct 'memory' of the other. This has chronological implications but more dating is needed. In North America the association of earth rings and earth mounds straddles a vast temporal and spatial scale, from Watson Brake in Louisiana at 5400-5000 BP (Saunders et al. 1997) to Chaco Canyon Pueblo communities of c. 850-1150 AD in the American Southwest (Van Dyke 2003:181). The Hay Plain constructed landscape was composed by adding one element to another, for example a substantial pathway leads to the hut located

within the 3 burial ridges in Robinson's drawing (Figure 8.12). Mitchell describes a burial with ridges built on top of an 'ash hill' or mound:

On its ample surface were just visible the vestiges of a very ancient grave, once encompassed by exactly the same kind of ridges that I had observed around the inhabited tomb, near the junction of the Lachlan and the Murrumbidgee (Mitchell 1839 Vol II :149).

The archaeology described in Chapter 7 indicates that on the Hay Plain Southwest 'oven' mounds and burials are linked as burials are found either in mounds or in distinct small burial plots close to mounds (see also Littleton 2002 in Chapter 2). Historical descriptions and drawings of the burial constructions (above) leave no doubt that they formed very obvious features on the landscape and they inform directly on the status of the men buried in this way, the status of their widows, and their role in post-death rituals. The Wiradjuri on the eastern side of the Hay Plain constructed burial mounds, while the people of the western side of the plain constructed burial ridges. Amongst the Wiradjuri on the eastern section of the Hay Plain, the word for grave or cemetery literally means 'parted or apart'. The body was placed in a squatting position, and a large mound raised over it, the back of the body was turned in the direction the people would take when they left the grave; 'in any direction wherever their means of sustenance could be best supplied according to the seasons of game, fruits, and roots. They, in their wanderings, turned their back to the corpse (and thus they were 'parted' as the name for mourning on grave implies) and on no account would they face or wander towards the corpse.' (Richards 1902c :166). Therefore the mound over the grave allowed people to locate the grave in space and thus avoid facing it. Other markers, such as the carved trees surrounding the grave of a Wiradjuri 'man of influence' would also serve the same purpose as well as identify the person. Widows tended graves for several months, and would presumably approach the back of the grave. Thus the grave markers, including mounds, ridges and huts, enabled people to position themselves on the landscape in deference to the spirit of the 'parted' one, and to ensure that the spirit did not reconnect with the living, that it remained 'parted'. The words used for widow, disintegrated, parted, earth, soil, dust, ashes, to dig a grave, and grave, all have the same root (Richards 1902c:166), so the words have a triple meaning of earth (the soil of the grave, the widows cap), parted (excavated earth and the dead), and disintegrated (earth, old widows cap, and the dead). In this way the grave, the dead 'parted', and living

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'parted', are all linked by the language root for soil/ disintegrated/ parted. English language used today echoes these concepts; the burials found on the Hay Plain in the 1990s were described by Aboriginal people as 'coming up' or 'showing themselves', suggesting that the uncovering of the burials disturbed the spirits which could therefore cease to be 'parted'. The explanatory link between widows and the constructed burials has a timeframe at least as long as the Wiradjuri language.

8.4 CONCEPTUALISED AND IDEATIONAL LANDSCAPES

8.4.1 The Storied Landscape

Stories and memories of the ancestors provide a different perspective on how people conceptualised the Hay Plain and certain aspects and features. The ancestral stories discussed below (see Appendix 8.2 for fuller detail) inform indirectly about the social context of the archaeological material and offer an explanation of landscape and important features. They describe how landscapes such as the reed beds and the treeless plains came into being, and features such as rocky bars and large trees. But they also humanise the landscape and provide continuity between the creators or *story* beings, the ancestors and the occupants (Langton 2002). They provide evidence of the way people connected to the landscape and to each other. Such natural landscapes are usually considered as 'conceptualised' and 'ideational', but as they were created and moulded by the *story beings* they can also be considered 'constructed'. These stories explain the important landscape characteristics and features of the Hay Plain and the Lower Lachlan and Lower Murrumbidgee. They talk about the floods, the reeds, swamps, lagoons, billabongs, deep waterholes, the yam plains, the treeless plains, the rocky bar at Balranald, the shape of Yanga Lake. They also tell how the *story* beings created the landscapes for the descendants, and told them how to look after the country and one another by protecting kin and sharing with kin. The words and phases, though translated into a different language and culture, nevertheless invoke some of the connections people had with the landscape.

In the first story, 'How the Nankeen makes the Reeds grow' *(*Yitha Yitha from the Lower Lachlan/Murrumbidgee (Figure 8.10), the Nankeen crane calls the floods and summer warmth thus growing the reeds, further helping the reeds grow by stretching them with his bill leaving the joints in the stems as a sign of his caring for country and the people (Mathews 1908). This signals the importance placed on the reed

beds by those that told the story. The gleefull discordant calls of the crane invoke the calling out of ancestors when the Murrumbidgee River is in high flood in the summer months, and the waters spread out on either side over the low-lying lands and swamps, sent by them to grow the reeds. This story invites "engagement and an inscription of the senses" such as sound, smell, warmth, as a "dimension of place making', and the visual triggers of reeds and the crane, rather than material monuments (Langton 2002:254).

'How the People got Fire and Origin of the Treeless Plains' (Wathi Wati/Nari Nari from the Hay Plain –Figure 8.10) explains the origin of the vast treeless plains. *Karigari* the hawk sent a whirlywind to scatter the sole fire that water rat and codfish had been selfishly keeping to themselves. The fire started in the reed beds and spread to the then forested plains, burning all the trees (Cameron 1885:368). The treeless plains themselves are a memorial to the hawk who gave the descendants the control of fire, and this is remembered by the names Keri Keri, Old Keri Keri and Keri East on the Hay Plain Southwest. In the story 'Bustards of the Great Yam Plains' (Wemba Wemba (Figure 8.10), the 'great yam plains' were made safe by the two young bustards who then flew up into the sky and became stars. They did this so their people could feed safely on the delicious milky yams, and are remembered by the stars that point to the southern cross, and by the fragrance of the myall (*Acacia pendula*) (Beveridge 1865:23-24).

In the 'The Nankeen Crane and the Crow' story (Yota Yota from Moama on the Murray), ancestors who went to the lagoons, billabongs or swamps to get mussels, or crayfish or to dig for *yelkah*, a plant with a tuber like a small turnip at the bottom, were being tricked and killed by the Nankeen. The Crow made the lagoons, billabongs and swamps safe by spearing the Nankeen, who can still be seen fishing for crayfish in these areas using the long feathers on the back of his head that represent the crow's jag-spear (J.E. Miller from Alf Morgan 1905). Stories explain the origin of two landscape features near Balranald, the rocky bar which is also a fish-trap, and the shape of Yanga Lake, which is the home of the ancestral Eaglehawk. In the 'Origin of the Bar in the Murrumbidgee River at Balranald' - (a Wathi-Wathi story) a low rocky bar across the bed of the Murrumbidgee River, visible only when the stream is low, was formed from the bodies of small boys that were drowned (Mathews 1908).

'The Eaglehawk at Lake Yanga' story (*Mathi Mathi/Wathi Wathi*) is a version of the

widespread Eaglehawk and Crow story also located at Mt Manara between Menindee and Wilcannia (Tindale 1939), Moorna near Wentworth (Berndt and Berndt 1993), Broken Hill (Berndt 1987) and Mutawintji (Tindale 1938-39). In this the Eaglehawk punishes the Crow for breaking laws by burning him, and then spearing and drowning him. The crow returned as a bird, grew feathers and was black, his eyes were white from the smoke of the fire. This happened at a small lake between the Wakool and Yanga Lake, Balranald. The Eaglehawk used to camp in a huge tree by Yanga Lake, and stole a child from the camps there. He put the child high up in the tree, but the child was rescued by the Brown Tree Creeper who dropped his fire stick into the pipe of the tree. The tree burnt down and fell into the lake, and is now seen as the ridge that divides the lake in two when the water is low (Hercus 1971:137). Eaglehawk and Crow stories are usually confined to areas that have matrilineal moieties represented by the Eaglehawk and the Crow, and explain the moiety and kinship system, as well as giving meaning to major landscape features (Martin 1999a). Yanga Lake and the lake near Kyalite are monuments created by these ancestors that symbolise the giving of laws and customs to the descendants, in this case the moieties and kinship laws.

Evidence for landscape stories also come from language sources. Yita Yita words from the Lower Lachlan near Oxley indicate that the deep waterholes were occupied by the 'bunyip' or rainbow serpent (Anon. 1903:206):

> Tellan Gerran [now spelt Thelangerin] -the Bunyip's camp or home
>
> Loocooroonook – Deep Water. The name of a deep waterhole in the Lachlan where the Bunyip lived
>
> Corrong-nook[now just Corrong] – Cold Water...cold deep water hole in the Lachlan River [a sign of the rainbow serpent]

The three words probably contain the same root for cold/deep and '*nook*' means water. Hobler records in 1847 that the 'bunyip' or '*kine pratie* has been seen...near the large reed beds...there is now a slight flood in the Lachlan and it is possible it has come out of some of the waterholes and taken to the large reed beds' (Hobler 1992:332). A drawing of the *kine pratie* by an Aboriginal from the Lachlan-Murrumbidgee junction was like 'an immense turtle 10 feet long – which they say takes [them] by the feet and eats [them]...there is one in Paika Lake (Hobler 1992:360). The *kine pratie* was the life force or source of water, feared, powerful, but respected and deep waterholes were approached correctly and according to

prescribed rules. Hobler could not understand this, and was always on the look out for 'bunyip' skeletons (Hobler 1992:315), not understanding that the rainbow serpent cannot die and that people's stories about being eaten were an attempt to explain to him that they had to follow the rules or would be in deep trouble if they swam or fished in the wrong place at the wrong time or with the wrong people, such as Hobler whose stranger's smell would upset the rainbow serpent (see Merlan 2000 for a discussion). These three words and Hobler's description enable us to reconstruct a little bit about how people perceived landscape as the personification of creation beings, and how rules shaped their relationship with the landscape. The interest Hobler showed in the 'bunyip' but his total inability to conceive of a supernatural creation being that had no single hard shape or form and could not die is a metaphor describing the very different perceptions of landscape belonging to Aboriginal and non-Aboriginal people.

8.4.2 Triggers of Memory

The landscape continues to be 'sensually inscribed', with sounds, smells and visual triggers of memory and understanding (Langton 2002:254). People living on the Hay Plain and adjacent areas today continue to interpret, remember, and identify with the landscape using the same triggers of memory used by previous generations.

The people located until the early 1960s at Moonacullah Mission on the Edwards River near Moulamein on the southern edge of the Hay Plain continued to live a very traditional way of life in their own country. A number of former Moonacullah people were interviewed for the Murrumbidgee Province survey (Pardoe & Martin 2001) and they knew of natural sand mounds with burials and ritually scarred trees, mounds with burials, oven material and ritually marked trees, and a range of other types of mounds. Barbara and Kevin Walker knew of burial mounds of their ancestors with marked trees of species of particular significance. Barbara referred to earth mounds as "ovens down in the forest" and stressed the creeks and lagoons of the Edwards system, particularly Tumadjeri Creek where it "finishes and turns into little creeks in the forest", as the location of mounds and camping places used in remembered history. Barbara also showed us a canoe tree cut out by her grandfather on Tumadjeri Creek, the "area her family roamed before Moonacullah". George Smith explained where to catch the different species of fish along a section of creek in the Werai State Forest, although it had partially silted up since he was young. He showed us a good

cod fishing spot, a deep waterhole in the bend, and said they were not allowed to swim there as children because it was a rainbow serpent waterhole. He added that about 250 metres downstream there was a sloping area in the river bank where you could get mussels, and that the shallow water there was good for catching bream. He said the "shell grit oven mound" near the mussel bed (as distinct from the ashy mounds in the forest) showed there was shallow water and habitat for mussels and bream. So to George, the shell rich mound tells him about the environment and what he can do there, and incidentally tells him what his ancestors did there. This suggests that existing features facilitate decision making by storing information about location, resources, who, and what activities that had been successful in the past (Wandsnider 1992). The shell rich mound is significant to George for the whole range of messages that he can get from it, and the juxtaposition of the mound and the important aspects of the environment, which is still being used in a traditional way. When asked why he called them oven mounds he said "I was always told by our parents they were **ovens**".

Jenny Crew, DIPNR Aboriginal Sites Liaison Officer in Deniliquin, has family history from her parents about using mounds. Jenny said her people travelled around their 'beat' from Moonacullah through the Werai State Forest to Barham, through the 1920's to about late 1930's. Jenny's father was born in 1922 and was driving wood trucks when he was 10 years old. The family camped on the mounds in the Werai State Forest, probably in tents. When asked why the family camped on mounds Jenny replied:

- "because they **always** camped there"

- "because they were the **best** camping grounds with all the resources the people needed, so the family wasn't affected by the depression, they were possum trappers".

Thus Jenny sees mounds as the link illustrating the continuity of her family's culture and history in the forest, and the memory trigger for her about how they lived. Like George, Jenny 'reads' mounds like a history book, telling her where and how her family and ancestors lived, telling her which places had the best resources. In an interview on the 'Elders of the Plains' website Jenny was asked "what's so special about this area of the Riverine Plain?" Jenny replied "What's most special to me is that it's my people's country, my father's country, and it's obviously what I call home. And it's flat! No big hills." For Jenny the very flatness of the plain is a feature that she

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identifies with, and she adds that the mounds "were used for living basically, in times of flood for instance, because it's so flat out there". In this sentence she is not implying that mounds were only used to get people up out of floods, but she is implying that the flatness itself has agency and mounds are one result of this agency.

In September 2000, Gubba Woods and I visited a number of mounds located on the edge of a very large depression with a source-bordering dune on the eastern side on St Pauls Station on the Hay Plain Southwest. From the top of the mounds on the bank the view of the landscape was immense, and we discussed how easy it is to imagine what the environment must have looked like when the people were living on the mounds and the depression was full of water, aquatic plants and animals. It was this experience and feeling of being part of his ancestors' life that Gubba found so exciting, not just the presence of the mounds. Gubba said he wanted more than anything to bring children and adults here to see this and imagine in their minds the people and the environment of thousands of years ago (Pardoe & Martin 2001). For Gubba standing on the added elevation of the mounds enabled him to view, interpret and "belong to" the landscape that was otherwise difficult to understand because of its flatness. The mounds and the landscape were a narrative when experienced as one, but if either the mounds or the depression were gone, the story would be unreachable. The elevation enabled Gubba to 'remember' the depression as a wetland environment full of rich resources that the mound people exploited. Gubba also demonstrated this belonging to the landscape and ability to read it when discussing the lignum swamps around Torrie Plains just to the north of St. Pauls, where he "knew" there would be mounds because of the food resources he 'knew' used to be in the lignum swamps (which have now almost been destroyed by water control, ploughing, burning, overgrazing (Eardley 1999, Kingsford 2003). Gubba was drawn to the lignum country as he felt (correctly) that archaeologists were ignoring potentially important places through ignorance. In this case he was working backwards compared to George Smith (previous page), he worked out where the mounds would be from his knowledge of the resources and the landscape, looking for the mounds that would complete the picture in his mind. It turned out that the mounds were placed overlooking the lignum swamps from the height of large raised palaeochannel levees. It is similar to the St Pauls depression, from the mounds you can view and interpret and read the lignum country which from ground level appears to be an impassable tangle.

Margaret Tucker was born in 1904 and lived at Moonacullah and the forests to the south of the Hay Plain as a child; Here she describes how her people 'knew' the landscape;

> The Barmah forest yielded up its food in abundance in season; crayfish, turtles, wild ducks, swans and their eggs...My people did not go walkabout at random. They went to pastures that were not new to them. They knew when these pastures would be flourishing with fresh growth...They belonged to us – no other tribe would trespass on them ... (Tucker 1977:40-41)

Doug Nicholls, Aboriginal cultural officer at Swan Hill, described the mounds as being of ongoing cultural significance but also a source for 'understanding how the river had changed across vast expanses of time ... a means through which the community could *get the storyline right*' (Sinclair 2002:172). The storyline he refers to is the cultural history of his people, the refutation of the unchanging people in an unchanging land paradigm and that the pre-contact landscape had essentially been un-used desert.

Another type of language is provided by the less forthcoming non-Aboriginal population of the Hay area. Mounds are commonly referred to as 'blackfella's ovens' or 'blackfella's oven mounds', which is the only concession generally allowed to pass people's lips regarding the occupation and ownership of the country by Aboriginal people. At least two large mounds have been given names by non-Aboriginal people that acknowledge these as significant landscape features on the flat plains. 'The Mount' at Ravensworth can be seen from the Balranald to Hay highway for many kilometres either side, and its name aptly describes the visual effect it has on people. 'Red Hill' is another large mound in the same general area but to the east of Ravensworth. Jeraly Hill is a high palaeochannel deposit, but it is made higher by the many mounds on top of it, although it has been affected by quarrying for road material. The parish named 'The Bluff' refers to the palaeochannel feature with 21 mounds on top first recorded by Judith Littleton (1993). Again the mounds substantially increase the dominance of this landscape feature. As more and more of the Hay Plain South West and Lowbidgee is laser levelled for irrigation crops, 'blackfella's ovens' are used by locals as markers for areas that are too high and the wrong sort of soil for irrigation, and to some extent left alone. The lower more clay rich 'black' soil produces the irrigation crops as it did in another life of swamps and reed beds, and the mounds have become an even more startling elevated feature

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in the predominantly laser levelled landscape. Some locals use the euphemism of 'gypsum rises' in preference to 'ovens'.

Another aspect of Hay Plain history became apparent during work in the area. Roads tend to follow mounds that are built on the large-scale linear raised palaeochannel sediments, situated on better draining soils above the swampy country. The Balranald to Hay highway does this in the section from Jeraly to Pevensy, and the smaller Maude to Nap Nap Station road is another example where you can drive along counting the mounds on both sides of the road. The Aboriginal wet weather tracks were commandeered for the newcomers use. An unfortunate aspect of this is that in some areas the mounds were quarried and used to pave the roads. Large areas of mounds in the Jeraly to Pevensy area were quarried and used for the old highway alignment. A similar situation exists for the local roads, I walked along the Dry Lake road for miles wondering why it had baked clay heat retainer all along it until a local explained. This large scale quarrying removed many mounds and destroyed many burial places. On the Murray near Echuca to the south of the Hay Plain, a similar situation exists, as explained in an essay titled 'Blackfellow Oven Roads'. The 'blackfellow oven roads offer an opportunity to rediscover a landscape ... a useful metaphor for making sense of the ongoing connections local Aborigines continue to have to land and water, and the struggle of settler Australians to find their own words and images' (Sinclair 2002:165). In 1995 I realised that many homesteads and woolsheds, particularly along the Murrumbidgee to the west of Hay, are built on large mounds or mound complexes, or in some cases on large shell middens. In the early pastoral history the presence of mounds was acknowledged by the new mapping onto landscape.

As this section is about interpreting and contextualizing landscapes, it would be incomplete without the archaeologist's input. For me the Hay Plain away from the river was initially strange and unsettling. Although familiar with 'outback' and 'remote', I was used to being able to place myself in the landscape through markers such as trees, hills, rocky outcrops, creeks, distant ranges. The Hay Plain all looked so much the same, I was 'all at sea'. I began to notice that interesting features presented themselves by the force of physics. Sheds, houses, dams, slight rises, tree clumps, and of course mounds, often floated above the horizon in the blue sky and I realized that you could see things that were actually below the horizon:

> The superior mirage can also make objects appear to be floating in the air or cause
> objects actually located below the horizon to appear above it..., a condition called

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looming. The superior mirage can also cause objects appear to be taller than they actually are, called towering ...Superior Mirage allows sight beyond the horizon: scale is greatly exaggerated (Heidorn 1999).

Not only are mounds 'enigmatic' and fascinating archaeological features, you could see them floating up in the sky, beckoning you towards them, when in fact they are really below the horizon! A person of 1.5 metres height can see the horizon 4.5 km away, and can see the top of a 2 metre high mound 7.9 km away (Dalager 2005). Considering superior mirages and the possibility of towering as well, people can see large mounds from a great distance, and the visual effect of looming and towering may at times be spectacular. This kind of mirage occurs when the air close to the surface is much colder than the air above it, in contrast to the more familiar heat mirage or inferior mirage which gives an impression of water in the distance (Heidorn 1999). The mounds of the Hay Plain Southwest float above the horizon during fine winter weather when the air temperature at ground level is colder than the temperature above, and the inversion is sufficient to bend the light. Writing this thesis I finally realized the significance of the Hay Plain mirages as a factor in interpreting the cultural landscape. Although much has changed on the Hay Plain, the mounds have been interacting with mirages for over four thousand years. To the archaeologist it can be no coincidence that the largest and the highest mounds are on the Hay Plain Southwest, which is one of the flattest, most treeless places and one where looming and towering mirages are common. Platform-shaped mounds and small mounds are found along the river where visibility is blocked by trees. Figure 8.14 shows that when the average length for mound clusters is charted against the moundedness (Table 8.2), the clusters fall into two distinct populations, a group of larger mounds found on the flat plains and group of smaller mounds found adjacent to rivers. This is corroborative evidence the big high mounds of the Hay Plain were built to take advantage of the fact that they could be seen for kilometers, and with mirages eight kilometers or more. This suggests they were built to invite people to visit, as a low profile would make sense if visitors were not wanted.
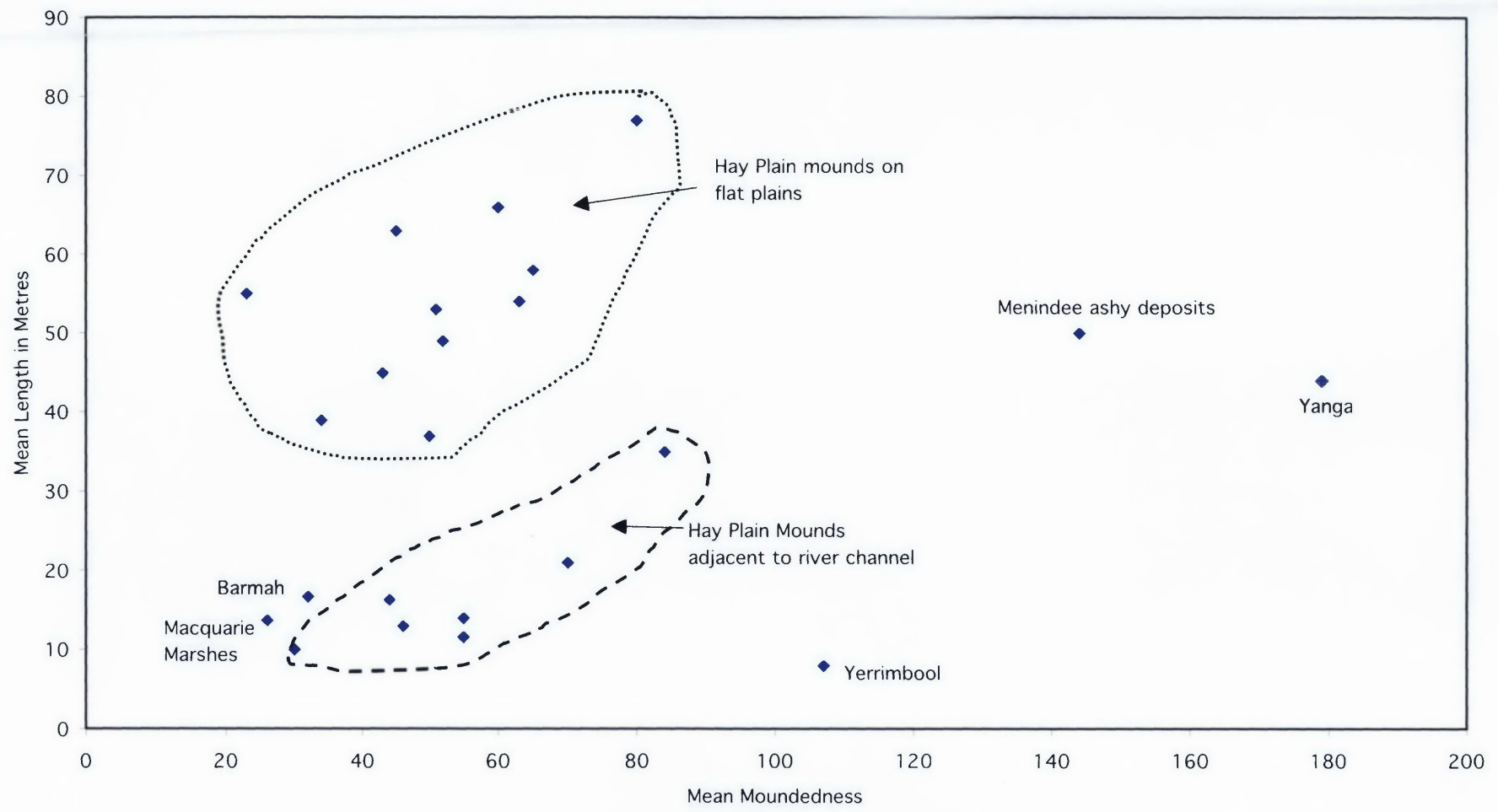
Figure 8.11 Mean Length x Mean Moundedness (Table 8.2), Grouped by Flat Plain and River Locations

In this sub-section I attempted to extract meaning from the words of those who currently inhabit the landscape. For Aboriginal people mounds enable them to interpret and belong to the cultural landscape of their families, ancestors and *story beings.* Non-Aboriginal people tend to think of mounds from economic viewpoint, using the word ovens frequently, but do not link this aspect into a holistic interpretation of prior or current Aboriginal life. To Aboriginal people, and to a lesser extent archaeologists, patterns of roads, homesteads and even horticulture invoke memories of the Aboriginal landscape, memories which are seldom acknowledged by the non-Aboriginal local community except for the recognition of the 'blackfella's ovens'. For myself as an archaeologist, the effect of mirages on large mounds on the flat, treeless Hay Plain Southwest means that they can be seen beyond the horizon. Mirage effects such as towering and looming in the right air temperature conditions allow the mounds to become a spectacular visual landscape, one that was meant to be seen, one that I speculate was an invitation to visitors. The current occupants see the cultural landscape of the Hay Plain as a palimpsest enabling revived or new interpretations, as well as continuation of older meanings. This process of creating or renewing social identity from previously constructed cultural landscapes is not restricted to the current time frame, but is as old as the Hay Plain itself, reflected in the continuous evolution of the riverine features.

8.5 MAPPING SOCIAL LANDSCAPES

8.5.1 Landscape as Identity

Robinson in 1846 indicates that on one level the people were named by the type of country they lived on, including a distinction between those that lived in the reed beds from others. While at Tala Lake on the west side of the Hay Plain he noted that:

> Unangun blacks means reed blacks. Myal means the boomerang blacks, no reeds...
> 'Eunungung' are the reed natives. Myal are those belonging to the bush who use the
> boomerang ... the lake natives are designated Watte Watte. (Clark 2000 Vol 5: 31)

'Eunungung' ends with '*gang*', the Wemba Wemba word for reeds (Stone 1911:444). It was perceived that those of the reedy country and country without reeds lived differently. Myall (or Boree) is the common name for *Acacia pendula* which grows on the Hay Plains (Porteners 1993:51). The 'lake natives' belonged to the open water lakes Yanga and Tala, not the reedy swamps. This type of naming and

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differentiation relates to the type of country and way of life people belonged to, although Watte Watte (Wathi Wathi in Figure 8.10) is actually a language name.

Curr describes a similar division amongst the Bangerang (Yota Yota) on the Murray River near Echuca, to the south of the Hay Plain. He suggests the language group was divided into two groups according to the type of country they occupied and that this influenced the food and lifestyle of the people, the reed bed people living a more sedentary life:

> two sections into which Bangerang were divided...The Towroonban were to a considerable extent an opossum-hunting people, whilst the Wongatpan lived chiefly on fish and roots. The principal habitat of the Wongatpan was the Moira, which is (or was) a reedy miasmatic locality.... The supply of their food existed in such abundance ... [they] seldom left the banks of the Murray and the swamps and reed-beds of its immediate vicinity (Curr 1883:109-111).

In Ngiyampaa country immediately to the north of the Hay Plain, men identified themselves by naming the swamps in their country, and could be addressed by the name of an important swamp: 'Every man 'owned' a series of swamps, all of which would be adjacent to one another. He shouted their names as he came onto the ceremonial ground and he might sometimes be addressed by the name of the most important one.'(Beckett 1959). This naming of country delineated the boundaries of a man's tenured land:

> The Wongaibon [Ngiyampaa] ... 'had the usual system of division into hordes, each owning its own territory, called its *ngurumba*. The boundaries of each *ngurumba* were well known to all in the neighbourhood. At the meetings of the hordes for the purpose of initiating the young men, the men of each horde, as they made their entry on to the ceremonial ground, used to shout out the names of the more important spots of their own territory.' (Radcliffe-Brown 1923:424)

8.5.2 Language and Landscape

The language groups of the Hay Plain and adjacent areas provide evidence of the movement of languages into the area and the replacement in some areas of the original language groups. The boundaries in this area are complicated because of the small size of language groups along the Murray River and Lower Murrumbidgee, and the lack of detail about some areas. Information on the boundaries of these groups has been collected (Appendix 8.3) and mapped as accurately as possible from

early sources (Figure 8.10). The spelling in Hercus (1989) has been used throughout because of early and current variations in spelling. Figure 8.10 differs slightly from the Tindale 1974 or AIATSIS maps because additional early sources of information have been used for this study. Luise Hercus (1965, 1969, 1989) gives insight into the three major language groups and sub-groups that occur on the Hay Plain:

- The Kulin Language Group covers the western side of the Hay Plain and the Edwards, Wakool and Murray Rivers to the south west. The Mathi Mathi, Wathi Wathi, Nari Nari, Perepa Perepa and Wemba Wemba belong to the 'Kulin' language group (a name used by linguists from the Wemba Wemba name *kuli* for man), which also includes a large number of groups in Central Victoria. Mathi Mathi and Wathi Wathi are very similar to each other, and differ in aspects of vocabulary and grammar from the Nari Nari, Perepa Perepa and Wemba Wemba group (Hercus 1989). Mathi Mathi and Wathi Wathi amalgamated into Mathi Mathi in the historic period (Martin 2000b), and the WembaWemba and PerepaPerepa also amalgamated into one group (Hercus pers. comm.).

- The Wiradjuri Language Group covers the eastern side of the Hay Plain and is distinctly different from the other language groups of the Hay Plain, being closely related to the languages to the north and north-west including Ngiyampaa, Wayilwan and Gamilaraay.

- The Yita Yita Language Group including Yita Yita, Tathi Tathi and Keramin (with sub groups Kemendok & Yerre Yerre), is very different to the Kulin or Wiradjuri language groups. The Yita Yita languages are found to the west of the Lower Murrumbidgee and from the Lachlan-Murrumbidgee junction to Oxley and Booligal on the Lower Lachlan. They have similarities with the languages found on the Lower Murray.

8.5.3 Movement of Languages.

The languages of the area have an unusual distribution reflecting older patterns overlain by more recent patterns. This reflects language groups moving into large areas, including the Paakantyi in the Lake Victoria to Wentworth area, and the Kulin languages into the Swan Hill, Balranald and Hay areas (Figure 8.16). Hercus has demonstrated that the Paakantyi language has been located adjacent (on the

north–west) of the Mathi Mathi language for long enough to actually change some of the grammatical structure of Mathi Mathi, as well as endings of some words:

> When languages are in contact, and particularly when there are ceremonial ties between adjacent people, borrowing takes place...it takes a long time for words to be adapted to another language, which usually has different rules of pronunciation...We know from grammatical and other indications that the languages of the lower Murray were genetically related and had some links to Kurienji [Keramin] and Yitha-Yitha /Tarti-tarti, but they were not at all closely related genetically to the Paakantyi type languages...Yet all these languages had some common vocabulary...likely to be borrowings. The words must have been shared for a long time as they have been adapted to the individual language systems, final -i   only, not -u being found in Yaralde, final -u and -i in Paakantyi, and final consonants in Kurienji (Keramin) and Yitha-yitha. ...It takes even longer for a grammatical feature to spread from language to language...

> The striking feature is that of all the Kulin languages, only Mathi-Mathi, the one closest to Paakantyi has a suffix -ayi , not 'ek' to mean 'mine'... This development would have had to come from Paakantyi, as there is no basis for -ayi anywhere in Kulin. Moreover the loss of the final consonant in the third person - u, (i.e. not -uk as in the other Kulin languages) and the preference throughout the vocabulary for vocalic finals gives some indication of Paakantyi influence in Mathi-Mathi...

> There are many other features that have spread across the language boundaries in a similar way. The Mathi-Mathi accentuation ...is likely to be due to ... the complex network of diffusion that existed through the region. Such a complex network would be unthinkable if there had not been long-term stability in the populations of the area (Hercus 1998).

Language is an indication of a close relationship between these groups of people over a considerable period of time, she estimates possibly as long as a thousand years (Hercus 1989:46-7,1998). The Kulin languages moved onto sections of the Murray River, Lower Murrumbidgee and Hay Plain and have been in place long enough for borrowing of words, pronounciation styles and grammatical rules from neighbours to substantially change the Kulin languages, particularly Mathi Mathi/Wathi Wathi. In a similar way the Paakantyi language moved into the Lake Victoria area and displaced the Murray Languages on the northern side of the river. Thus the original distribution of Murray River languages along the Murray corridor and the Lower Murrumbidgee has been displaced. On the Hay Plain the Yita Yita on the lower Lachlan is the only

remaining example of the original Murray River language group and have been effectively cut off from the Murray River by Kulin languages.

8.5.4 Relationship between Language Group and Social Organization

The most obvious and well documented relationship between language and social organization that impinges on the Hay Plain is that of the related languages of Wiradjuri, Ngiyampaa, Wayilwan, Gamilaraay, Ngemba and Yuularaay which all have similar moiety systems (Cameron 1885,1905, Howitt 1996[1904]). In this case the entire major language group, which covers a vast area of NSW, has the same type of matrilineal moiety with 4 section system, with sections and totems being matrilineal but alternate generation (i.e. handed down through the grandmother).

There is evidence that Yita Yita have adopted the same system as the Wiradjuri and Ngiyampaa. This is suggested by the totems listed by Yita Yita/ Nari Nari man Charlie Kirby in Tindale (1938). Charlie was mallee hen and his mother Clara was a Yita Yita women of *nai nai* curlew totem (his father Jerry was Nari Nari of the eaglehawk totem). In this Charlie has a different totem to his mother, which indicates the Wiradjuri alternate generation totem inheritance rather than direct inheritance through the mother as in the Paakantyi system.

The Paakantyi type Makwara and Kilpara moiety and two section system was adopted by the Tathi Tathi (Cameron 1885:370). Jack Long was born near Balranald in about 1872, and his father was Mathi Mathi known as Lalugu, and his mother Bindul was both Mathi Mathi and Tathi Tathi. Jack belonged to the Makwara Moiety and was kangaroo (*bukumanama*) totem (Hercus & White 2000), the same moiety system as the Paakantyi. It seems from this evidence that he inherited his Makwara moiety and totem through his mother's Tathi Tathi lineage, taking the Tathi Tathi name for kangaroo totem and the Paakantyi moiety name. Further detail is given by Loonus who states that:

> The Euston tribe was called Tartie Tartie which extended 5 miles west of Euston and about 40 miles east of Euston...hair plucking [ceremony] ...was practised from the SA border up the River Murray as far as Redgate 30 miles east of Euston and north as far as Pooncarie on the Darling River and east of Pooncarie as far as Clare Station. The class names of the Tartie Tartie were Kelparra, Mookwarra, these names extended right to Wentworth thence as far as the SA boundary and up the Darling River as far as Pooncarie thence east to Clare Station (Loonus 1898).

This corroborates that the Paakantyi social organization of the Makwara and Kilpara matrilineal moieties and the southern Paakantyi ceremony went up the Murray River only as far as the Tathi Tathi eastern boundary, which was near the Murrumbidgee junction, but it did not actually go into the area of the groups occupying the Murrumbidgee and Hay Plain. On the northern side as well, the Paakantyi system went as far as Clare Station which was the boundary point between Paakantyi, Yita Yita and Ngiyampaa (Martin 2000b).

Cameron (1905:8) says that all the tribes he discusses with the exception of the Paakantyi and Tathi Tathi were all divided into four 'classes' [sections] of Ipai, Kumbo, Murri and Kubbi. This suggests that the Hay Plain groups he names (Yita Yita, Wathi Wathi/Mathi Mathi and Nari Nari) adopted the system belonging to the Ngiyampaa-Wiradjuri group to their north and east. Thus the language group does not influence the adoption of social organization. Two of the Yita Yita language group adopted Paakantji social organization (Tathi Tathi & Keramin) and one (Yita Yita) adopted the Ngiyampa-Wiradjuri organization. The Kulin language groups Mathi Mathi/Wathi Wathi and Nari Nari/ Wemba Wemba/Perepa Perepa apparently also adopted the Ngiyampaa-Wiradjuri organization although there is less direct evidence.

With the Yita Yita we have an example of social organization on the Hay Plain being acquired from neighbours speaking a completely different language. Tathi Tathi which has an almost identical language to Yita Yita, adopted a different type of organization from a different language group again. These patterns had been in place for a considerable time, for example Tathi Tathi borrowed the Paakantyi moiety names and totems, but had adopted their own language names for the totems (Cameron 1885:349, Hercus & White 2000). The Hay Plain Kulin languages also probably adopted the Ngiyampaa-Wiradjuri organisation. As Cameron's main informant was Wathi Wathi it is certain he would have noted a different system. Thus social organization and language are independent for the western Hay Plain groups, in contrast to the large Wiradjuric group where language and social organization are dependent.

8.5.5 Relationship between Language Group and Ceremony

There are several accounts of the language groups of the Hay Plain travelling to each others country for ceremonies (Mathews 1897, Mitchell 1839 Vol II), 'fishing' (Hobler 1992, Mitchell 1839 Vol II, Robinson in Clark 2000) or 'holding a jubilee'

(Beckham 1846). Cameron states that Wathi-Wathi initiation ceremonies were attended by the Paakantyi, Tathi Tathi, and more rarely by the Mathi-Mathi This means the Wathi Wathi had a form of 'bora' ceremony like the Ngiyampaa and Wiradjuri, but it was attended by groups who themselves had the Paakantji style ceremony (Cameron 1885:357-360, Loonus 1898).

Mitchell was informed near the junction of the Murrumbidgee and Murray Rivers that the Paakantyi from Menindee had danced a 'corrobory' with the locals 6 weeks previously, and had promised to return in one month from Lake Benanee where they were fishing (Mitchell 1839 Vol II:131). Robinson records in 1846 that Mathi Mathi and Wathi Wathi from Yanga and Tala Lakes and Yita Yita people from Lake Waljeers, as well as 'others' were all at Lake Tala fishing and mussel collecting (Clark 2000 Vol 5:31). At Swan Hill in 1836 Mitchell found the Yita Yita Lake Waljeers people two hundred kilometres from home visiting the local Wemba Wemba (Mitchell 1939 Vol II:137). Evidence shows that these groups often came into each others country for extended gatherings, especially at the large lakes such as Lake Tala near Balranald (Robinson in Clark 2000), and Lake Benanee in Tathi Tathi country (Mitchell 1839 Vol II:91).

However, Mathews description of a 'burbang' in Wiradjuri country to the east of Hay suggests that only Wiradjuri groups attended (Mathews 1897). Tindale indicates that the large Wiradjuri group was linked by maintenance of a 'cycle of ceremonies that moved in a ring around the whole tribal area tended to assist tribal coherence despite the large occupied area' (Tindale 2006). The evidence suggests that although aspects of Wiradjuri social organisation and ceremony was adopted by the groups on the western side of the Hay Plain, the internal Wiradjuri alliances were more significant for the Wiradjuri than alliances with the rest of the Hay Plain. The change in various names for *Typha* common to all the western Hay Plain and Murray River groups, to the Wiradjuri name *balyan*, also suggest that there was a boundary of some sort between the western groups of the Hay Plain and the Wiradjuri.

8.5.6 Mapping Language and Social Organization over Archaeology

The people occupying the Hay Plain had (and still have) a range of languages, social systems, ceremonies, and trade alliances forming a social network with multi-layered boundaries. In addition people differentiated themselves on a different scale by the type of landscape they lived in and their 'style' of living. Thus 'reed bed' people

from different language groups had an additional name signifying how they lived, and possibly mounds played a role in differentiating local groups who live around reed beds and swamps. Men also identified themselves as belonging to certain swamps, and could be called by the name of an important swamp. Men 'own' potential canoe trees or fish weirs. It is a complex and multi-layered system with boundaries cutting across each other. Once the languages that were present at contact were in place a system of borrowing of language features, social organization and ceremonies was forged.

The distribution of mounds on the Hay Plain does not reflect the post contact language distribution. Within the boundaries of all the language groups on the Hay Plain there are concentrations of mounds and areas without mounds. While mounds in Wiradjuri country are restricted to the narrow corridor of the Murrumbidgee East, Chapter 7 concluded that this distribution was related to wetlands with dense predictable plants such as *Typha*. Burial style however, shows a distinct boundary with burials mounds and carved trees in Wiradjuri country, while the west of the plain displays burials with earth ridges and huts. The distinct boundaries in stone tool technology and materials match to some extent the distribution of the burials styles and major language groups. The area of cobble tools and utilitarian technology on the Hay Plain North-east closely matches the Wiradjuri boundary. The materials are derived from the Wiradjuri hilly country further to the northeast, and the distinctive technology focuses on using these relatively local materials rather than trading in finer materials from further away. The Hay Plain southwest is dominated by the unique bipolar and semi bipolar microblade technology consistent with the use of the very small and often poor quality silcrete nodules and quartz pebbles that appear to have come from the south. However, the only concrete dates at the present for the Hay Plain Southwest stone technology are for the Tchelery and Ravensworth mounds, and these seem to be too old (about 4,000 BP) to reflect the contact language patterns (Luise Hercus pers. comm.). It is more feasible that the stone technology patterns both in the northeast and the southwest were in place before the movement of Kulin languages into the Hay Plain southwest. The patterns may have been in place from the period when the Murray River languages dominated the area, or longer. If this is the case then the original trade routes and alliances were kept open during and after language change, thus language movement did not change all trade alliances.

If some stone material trade routes are 4,000 years old, other aspects of the Hay Plain social organisation may also have been 'traded' or disseminated via cultural

channels during this time. This may include the idea of building mounds which is most likely to have been disseminated by the marrying out of women to adjacent groups. If this is the case then a pattern of mound building may be seen as gradually moving out from its origin, which at the present time has to be considered from dating evidence as being the Hay Plain. Mounds therefore give a unique insight into the way ideas moved across the landscape, in the same way movement of rock art styles or signature stone artefacts does in other areas.

8.6 MANAGED LANDSCAPES AND GENDER RELATIONS

8.6.1 Managing Wetlands

This Chapter has considered the constructed landscape of mounds, burials, paths, reservoirs, weirs, and 'storied' and socialised landscapes. However, various lines of evidence indicate that people on the Riverine plain also managed plants and animals, thus introducing another layer of relationships with the cultural landscape. Many ethnographic sources describe *Typha* rhizome as a major provider of food and fibre on the Hay Plain and the Murray River and its tributaries to the south. On his 1836 trip down the lower Lachlan and Murrumbidgee Rivers of the Hay Plain, Mitchell records the importance of *Typha* for food and fibre, particularly around the reed beds, lagoons and swamps. Mounds, cooking of *Typha* rhizomes, high population density and reed beds are synonymous:

> Barney, the native... taking up the root of a large reed or bulrush, which grew in a dry lagoon hard by, and by shewing me how the natives extracted from the *rhizoma* a quantity of gluten;..It struck me that this gluten which they call *Balyan*, must be the 'staff of life' to the tribes inhabiting these morasses, where tumuli and other traces of human beings were more abundant than at any part of the Lachlan that I had visited (Mitchell 1839 Vol II:53).

> The principal food of these inhabitants of the Kalare or Lachlan appeared to be 'balyan", the rhizoma, as already stated, of a monocotyledonous plant or bulrush, growing amongst the reeds. It contains so much gluten, that one of our party, Charles Webb, made, in a short time, some excellent cakes of it; and they seemed to me lighter and sweeter than those prepared from common flour. The natives gather the roots and carry them on their heads in great bundles, within a piece of net. ...indeed this was obviously their chief food among the marshes (Mitchell 1839 Vol II:60-61).

...the lofty mounds of burnt clay, ...I saw the first of these heaps, when near the end of the last day's journey along the Lachlan, where this river partook of the reedy character of the Murrumbidgee. I understood that the 'Balyan' or bulrush-root, which is the chief food of the natives there, is prepared in those kilns, when a family or tribe are together (Mitchell 1839 Vol II:80-81).

The reed beds on the Murray to the south are described in the same way:

reeds covered a vast region before us... The lofty ash-hills of the natives, used chiefly for roasting the "balyan"(or bulrush), a root found only in such places, again appeared in great numbers. (Mitchell 1839 Vol II:134)

Robinson corroborates Mitchell's assumptions; 'The swampy and reedy country on the Murray are the spots most frequented by the natives. I visited two of these localities and conferred with large parties of blacks. Wild fowl, fish, and edible roots are in abundance.'(Robinson 1843:1249), and 'the roots of the bulrush and fresh Water Muscle (unio) are the Chief supports of the Aborigines' (Robinson 1846:306). Other early descriptions of cooking of *Typha* in ovens and mounds on the Hay Plain and the adjacent Riverine Plain include Beveridge (1865, 1883,1889), Cairns (1859), Curr (1883), Kirby (1895), Krefft (1866a), and Mathew (1889:396).

Stone (1911:444-445) lists several names for various parts and stages of *Typha*;

Rushes, root – **gumbung** [the common name cumbungi is derived from this]

Rush root (old) (after water has gone) – **wangull**

Rush root (old) (after cooked) – **boortitch** (used as food)

Rush root (old) (after fibre) – **jeerk**

In addition Beveridge gives the name for the spring shoot of *Typha*: 'The flower stem of this flag is also eaten when young; a foot or eighteen inches long is the best size... the natives are extremely partial to it, and therefore consume it in vast quantities. In this green stage it is termed by the aborigines *ioonty.*' (Beveridge 1889:19-20). This sprang up through the water usually by the end of August, as the weather warmed, and when about a foot in length above the water it was pulled up and eaten raw (Cairns 1859:350).

The other common term for *Typha* in the Hay Plain area is the Wiradjuri word for the rhizome: *'baal'yan* – roots of the bull rush. Who, or which is made covered. (The

edible part is covered with a trunk)' (Richards 1902a :114). The eating of *Typha* as a significant food item continued into the 1900's. Margaret Tucker was born in 1904 and grew up at Maloga and Cummeragunga on the Murray and Moonacullah on the Edwards River: 'We ate the roots of many plants, especially the cumbungies growing around the natural waterholes or creeks. The roots were thick and when cooked in hot ashes were much enjoyed.' (Tucker 1977:37).

From ethnographic evidence we know the reed beds were fired and there is also other evidence to indicate that the reed beds and in particular *Typha* was managed or 'grown', suggested by the PerepaPerepa definition of *Typha*: '*wongal* -plant grown in swamp - root eaten by blacks' (Norris 1899:1033). The first post-contact descriptions all indicate the importance of *Typha* on the Lower Lachlan, Lower Murrumbidgee and the adjoining Murray 'reed beds'. However, Beveridge, stayed in the area until 1868 and wrote descriptions that clearly took into account some of the early changes that took place after the pastoral annexation of the area. He says;

> They also have a farinaceous root which grows abundantly on the marshes; it is very nutritious, and quite as palatable as the best potatoes. It can be got in any quantities, but it is hard work digging it up, therefore it is not often procured (Beveridge 1865:15)

> A species of flag, having a farinaceous root, called by the natives *kumpung*, grows in abundance by the margin of all the great rivers and lakes; it makes a very palatable and nutritious food, of which the natives are justly fond. It can be procured in abundance, but as it requires considerable labour to dig, much less of it is procured than its manifold merits warrant (Beveridge 1889 :18)

The first description was from a paper read in 1861, 16 years after Beveridge settled on the Murray below Swan Hill, and the second description identifies the root as *kumpung* (Cumbungi or *Typha*). It appears that it very quickly went down the list of priority foods on the menu, he says because of the amount of energy needed to dig it up. However, personal observations of *Typha* growing on the Hay Plains put this into a different context. *Typha* will grow into a mass of matted rhizomes which are difficult to dig out. However, if the *Typha* is managed so that there is an advancing edge of new growth, or it is well-spaced, it is astonishingly simple to collect as the swamps dry out. In April 1999 after the water in Ravensworth Lake was lowered by the irrigators, the *Typha* rhizomes were showing little 'handles' poking up above the ground, or showing through large cracks in the mud made by the pushing rhizomes. All one

had to do was bend down and pick up the 'handles' and pull up several metres of rhizome, each handful enough for a family lunch (photos 52-54). It is probable that people who depended on *Typha* for a staple food managed this resource in such a way that it was easy to collect. The situation described by Beveridge of the hard work digging the rhizomes up appears to reflect a post-contact situation when the reed beds had ceased to be managed by the Aboriginal community as a staple food resource. Explanations for this include;

- Aboriginal knowledge and/or demographics needed to manage *Typha* was lost due to post-pastoral population decimation (Littleton 2005)

- Aboriginal people were unable to manage *Typha* because it clashed with the pastoral pursuits which included grazing cattle in the reeds

- the post-contact economy replaced *Typha* with flour rations, a more energy efficient strategy (O'Connell and Hawkes 1981:116).

It is also possible that the decline in use of *Typha* had already set in before the 1840's pastoral annexation of the area due to decimated population resulting from the smallpox epidemic that had swept through the Riverine plain prior to this (Curr 1883:106 &108, Beveridge 1889:36). The remarkably short time between sheep and cattle arriving and the disappearance of small mammals such as the bilby hint that some disappeared because of the cessation of Aboriginal land management practices such as firing. Krefft (1866b) lists the stick nest rat, pig-footed bilby, bilby and bettong as being already extinct or nearly extinct by 1857 on the Murray, only 10-14 years after first sheep and cattle arrived. He attributes these disappearances as being due solely to the presence of sheep and cattle, presumably the destruction of habitat and competition for food, but changing management may have been a factor.

Firing of *Typha* was a form of crop management. Eyre described that on the Murray River *Typha* was 'used more or less at all seasons of the year, but it is best after the floods have retired and the tops have been burnt off' (Eyre 1845 Vol II:269). In Western Australia *Typha* was used in April and May, after the 'broad leaves will have been burned by the summer fires, after which the taste, according to native ideas is improved (Gott 1999:42 quoting Moore 1884). Grey stated that in Western Australia 'they bestow a sort of cultivation upon this root, as they frequently burn the leaves in the dry seasons, in order to improve it (Gott 1999:42 quoting Grey 1841). Gott

suggests that burning fertilised the plants and made the harvesting easier, also allowing light in to the new shoots. However, the fact that the rhizomes tasted better suggests that the important effect was to change the chemical structure of the carbohydrate to a more digestible form and possibly sugars (see Chapter 4).

Managing *Typha* included the physical aspect of digging or pulling up rhizomes in such as way as to encourage the right type of growth. The experience of the pulling up rhizomes at Ravensworth Lake indicates that it was necessary to control the growth of *Typha* so it did not become matted and difficult to collect. A combination of harvesting technique, firing and water control could encourage this. Water control was also necessary for the growth of *Typha*, areas needed to be flooded often enough and for long enough to allow growth of the crop. However, when the water dried out at the end of the growing season, it was easier to harvest and the *wangull* carbohydrate changed to a more energy rich food.

This quote from Cairns, guided by Beveridge and 'one of his native stockmen', also hints that fire was necessary to keep the *Typha* open (which would make it easy to harvest). It suggests that the reed beds changed in nature becoming thick and impassable after the advent of the pastoral era. It also suggests that *Typha* was affected by frosts, which may have also improved the energy value of the carbohydrate (see Chapter 4):

> It is full grown, or nearly so, by the time the waters recede, and remains green until the frosts come round, when it becomes quite brown, and, if not destroyed by fire, continues so until the young shoots spring up the following season; and so it goes on from year to year, until it becomes so thick as to be impervious to the sun, thus rendering the ground quite swampy and impassable for stock, therefore useless or worse than that. (Cairns 1859:34)

Typha was not all fired at once, but in sections or strips, a management tool that may have systematically prepared the *Typha* for harvesting, described by the first party of pastoralists to enter the Swan Hill area in 1845:

> everything was just in its natural state. In the distance where the blacks had not burnt the reeds, it looked like large fields of ripe wheat; and nearer, where they had burnt them, it had the appearance of a splendid crop just before it comes into ear. No animal of any description was there to trample or break down the beautiful reeds which, in most instances, grew up to ten feet high, and extended on an

average from a half to a mile on both sides of the river ...[also] ovens for cooking the compung (the root of the bulrush which grows in the reed beds). (Kirby 1895 :28).

Typha may have also been harvested progressively as shallow swamps dried out in succession and was important in 'marshes that are subject to periodic inundations' (Eyre 1845 Vol II:269). Ethnographic descriptions indicate that it was usually harvested in late summer to mid winter after the swamps dried out, when it was referred to as *wangull* (Stone 1911). Water management to either hold water in or drain swamps could have been achieved by 'constructing dams, or excavating the outlet of a lake or lagoon' (Brough Smyth Vol I:201). *Typha* provides a range of important resources which would have extended it is importance in the annual cycle. The mature rhizome provided carbohydrate and fibre, the young rhizome shoots and spring or early summer flower stem shoots were eaten raw as a salad (Beveridge 1889:19-20), the leaves were used for bedding (Mitchell 1839 Vol II) and thatching (Figure 8.14), leaves for matting and wrapping food (baked clay with leaf imprints from the excavations), and possibly the pollen which may also have been eaten during its short season, wrapped and steamed in ovens similar to the Maori style (Prendergast et al. 2000:254-55). A middle range exercise estimating return rates for foods in the Great Basin of North America found *Typha* pollen was the highest ranked plant resource, returning10-40 times more calories per hour than *Typha* root (Simms 1985:121).

Other wetland food plants may also have been managed in a similar manner such as belillah (*Bolboschoenus medianus* or *caldwellii*) which were an important food of 'lands subject to floods' (Eyre 1845 Vol II:269), may also have benefited from firing the 'reed beds', although no definitive records were found in the ethnographic literature. It may also have benefited from the digging of the underground corms, water management, or frosts. A North American study ranks *Scirpus (Bolboschoenus)* seeds as being far more valuable than the USOs (species not given) (Simms 1985:1210. *Triglochin procera* was probably an important food resource of wetlands on the Hay Plain, as it was on the Murray River near Swan Hill:

> The common small flowered yellow water-lily, which so plentifully fringes most of the colonial lakes and lagoons, is another source from whence they derive a desirable addition to their diet. The roots of this plant are formed of many tubers of about an inch and a half long by half an inch in diameter. The root of one plant

will frequently yield as many tubers as a half-pint measure will contain. They are baked before being eaten, and are of a sweet mawkish taste, very gluey in appearance, not unlike what is termed a waxey potato. They are called *lahoor* by the natives. (Beveridge 1889:20)

Beveridge mistakenly thought the roots were coming from the water lily that grows with *Triglochin* (Gott 1982:62). He indicates that *Triglochin* was 'baked' or cooked in ovens, and was therefore probably cooked in mounds. This plant may have benefited from digging and spreading of tubers, or water management, but not firing. It tends to be found in lagoons and lakes, but can also grow in shallow swamps and floodplain environments (Gott 1982:62). Beveridge also suggests that non-wetland plants irrigated by floodwater provided seasonal food that supplemented the wetland plants: 'The sow thistle, dandelion yam, and a trefoil which grows on country which at times is inundated during their respective seasons are consumed in vast quantity' (Beveridge 1889:20).

8.6.2 Gender Relations

Ethnographic accounts specify that women harvested and cooked *Typha* and other food plants, and the results of the Ravensworth and Tchelery mounds are consistent with this situation existing at least 4,000 years ago:

Along the marshy grounds of the Murrumbidgee and Lachlan Rivers a plant grows profusely which is locally known as 'Combungie' or 'Wangle'....These roots used to be pulled up and collected by the women of a small community (Mathew 1889:396).

Compung (the root of the bulrush...)... are dug up by the lubras (women) with their yamsticks... long and shaped like carrots...not unlike the meal of a potato when cooked (Kirby 1895:28)

The principal duties which fell to the share of the women in domestic life were to provide the daily supply of wild roots and vegetables, of which the food of the Bangerang in great measure consisted ... the women would leave camp ...for the purpose of getting roots and vegetables...(Curr 1883:116)

The gathering [of] vegetable food, and in fact the cooking and preparing of food generally, devolves upon the women, except in the case of an emu or a kangaroo, or some of the larger and more valuable animals, when the men take this duty upon themselves. (Eyre 1845 Vol II:291)

The ethnography for the Hay Plain and adjacent Murray River shows that women also were usually in charge of cooking plant foods as well as smaller animal foods. Women were in charge of cooking food in ovens, including obtaining heat retainer, digging holes, collecting firewood, covering the oven and uncovering the oven (Curr 1883:119) except in the case of large animals where the men usually did the actual preparation and cooking (Berndt & Berndt 1993:103-4). This is corroborated by a survey of fire use in Australia which indicates that women tend to do the cooking, and usually (sometimes with help from children and men) collect firewood, they are mostly but not solely responsible for cooking vegetables, small game and fish, while men nearly always cook large game (Gleeson 1995:100-101).

Women not only harvested and cooked plant foods, they knew how to manage it. Areas of 'root' foods were never completely denuded, and for dry land 'roots' such as *Microseris*, only plants of the right age were uncovered, the mature tuber or bulb taken, then the earth was pushed back and the plants firmed down (Berndt & Berndt 1993:110). A survey of fire-use in Australia concluded that in general men were involved in large scale 'cleaning up the country' type burning, however women used fire to:

- Promote flowering and fruiting of trees

- To protect or promote yam growth

- Promote reeds and pasture plants in general (Gleeson 1995:100).

These results suggest that women may have been involved in burning the reed beds to increase the food value of the *Typha*. Wandsnider outlines North American ethnographic evidence that critical knowledge about plant foods was usually held by women, and that 'specialist' women oversaw the processes involved in managing, harvesting and processing. Plants were harvested when they contained a maximum amount of energy, usually before reproduction, they had to be processed immediately to prevent spoilage, and each locality was watched for that narrow window of opportunity (Wandsnider 1997:23).

The rapid build up of the Tchelery 1 and Ravensworth 3 mounds are evidence for extended periods of stay at the locations of the large mounds found beside wetland features on the western side of the Hay Plain. Living close to the wetlands was a direct result of the rich resources, but such closeness would enable people to manage,

curate, increase, and obtain more exact knowledge of when to harvest, or how to cook or preserve plants such as *Typha* depending on the nature of the carbohydrate contained in the plants. Women would be dominant in this process of obtaining 'specialist' knowledge, as the harvesting, cooking and processing of plant food was substantially a role of women. The extended camping around wetlands led to a situation where people could become more sedentary, based on their increasing knowledge of the wetland resources and how to manage them. The North American people learnt how to utilise the difficult plants such as *Agave* and camas (Chapter 4) through expert knowledge of the carbohydrate structures in each species and how to manage, harvest, process, cook and store them. At a similar time frame and using similar technology including heat retainer ovens, the Aboriginal people of the Hay Plain apparently did the same. The increase in focus on *Typha* and other wetland resources that were women's business, would lead to a change in the gender relations of such groups. Men had tenure of land, special trees, swamps, fish weirs, fish traps, but women had specialist knowledge that enabled the groups to stay in certain places for longer by providing a staple food such as *Typha*. Women essentially did the work that resulted in the material mounds are made up of, and it is therefore reasonable to predict that it was women who shaped the mounds according to the template of each area. The question is why would women do this? In the post-contact period women tended to move into their husband's country to live:

> The women not being related to each other, but members of several neighboring tribes, quarrels amongst them, though not frequent, were more common than amongst the men ... their sympathies lay rather with the tribe in which they had been born (Curr 1883:129) ...No man married a woman born in the tribe. Wives were obtained by the exchange of females with any other tribe (Curr 1883:114)... children belonged to the tribe of the husband. (Curr 1883:115).

The Ravensworth 3 and Tchelery 1 mounds are evidence of a change in gender relationships occurring around 4,000 BP. The women gained specialist knowledge providing a predictable staple food supply that allowed some degree of sedentism. This resulted in more freedom for high cost or high risk activities such as hunting of big game and big fish, and building of infrastructure such as fish weirs and big nets. It also enabled the women to provide food for ceremonies and social gatherings and to make nets for trade (Krefft 1866a). A hint of the changing gender relationships within the 'reed bed' groups is given by Curr:

In consequence of the rather stationary life led by the Wongatpan, who seldom left the banks of the Murray and the swamps and reed-beds of its immediate vicinity, the rearing of children was comparatively an easy matter (Curr 1883:109-111).

Such women would be valuable partners and perhaps mound building was a celebration of their achievements and worth. Following on from the discussion of the visual spectacle of the mounds, including the effects of mirages, it is suggested that women built mounds to advertise their (and their daughter's) value. On the flat plains mounds also communicated the whereabouts of the women so their families could visit. Perhaps women built and shaped their mound slightly differently, following the template for the area but also individualising it, by a creating a slightly different shape. Beveridge gives an eye-witness account of a mound on the Murray near Swan Hill progressing from the 'moment of the first "yam-stick" being dug into the earth' to 'the largest and most complete one extant', over a period of 28 years (Beveridge 1869:187). Mounds in this area are not as large as the Hay Plain Southwest largest mounds, but this gives a timeframe of 28 years for a reasonably large mound, which could be overseen by the female head of family. On her death a daughter or daughter-in-law would continue to build on the mound. The very large mounds of Ravensworth and Tchelery were built over 300 and 600 years respectively, which represents between 15 and 30 generations based on 20 years per generation. Curr states that only one mound would be in use at a location, others in the area were abandoned (Curr 1883:107-8) which leads to the hypothesis that clusters of mounds indicate genealogical histories. Burial occurred in mounds after they had ceased to function as ovens, and the link between the mound builders and the buried people would also be a genealogical one. Thus mounds came to function as mnemonic devices which fixed memories of social structure and genealogical history: 'mounds are also a kind of inscription of social memory in space', and memorialisation which transforms space into place (Pauketat & Alt 2003:161-2).

The specialist knowledge of wetland plants may have enabled survival through seasons when food was scarce. Crown Lands Commissioners for the Murrumbidgee refer to the 'very anxious period when the river and creeks are flooded" (Bingham 1846:78) and 'about the months of July, August, September, and October, when the waters of the Murrumbidgee and Murray are on the rise, they are unable to procure any fish whatever, and are forced to subsist on roots, herbs, grass seeds, fungi &c,' (MacDonald 1850[1969]). Hobler also states this was a difficult time on the

Lowbidgee: 'the river rising again...The blacks are clustering about here in considerable numbers...the fish do not bite well in the river and I fancy they are sometimes hungry – yesterday I observed some gins preparing large messes of tadpoles for food by pinching off the stomachs...they are of a large description of frogs they have been feasting upon for sometimes past' (Hobler 1992:328).

From another viewpoint, mounds themselves were an agency of change in gender relations. Ethnography describes how heat retainer ovens were used to cook food belonging to several families, each woman tying up her contribution and receiving the same after cooking (Eyre 1845 Vol II:291).This is in contrast to cooking in individual hearths, where each single individual or each husband/wife cooked at a separate fire (Curr 1883:116). Cooking in mounds occurred on a large scale, said to be 'common to all the camp' (Curr 1883:118) and used 'when a family or tribe are together' (Mitchell 1939 Vol II:81). Ovens were also used to 'cook the large quantities of food that needed to be cooked at once to prevent putrefaction' (Bulmer in Campbell 1994:56). Presumably, the cooking in ovens/mounds would lead to a greater co-operative relationship between the women and could lead to a greater need for leadership in the complex exercise of cooking. The women with specialist knowledge about the management and harvesting of plants may also have assumed leadership in the cooking of food in ovens, or leadership may have been partitioned. Thus relationships between the women evolved through cooking in co-operative ovens, and when utilisation of food crops such as *Typha* intensified and cooking focussed on mounds, the mounds themselves came to inform about further change in relations. The female co-operative, including its 'specialist' knowledge holders, would be a dominant force in the social relations with the male members of the group. The co-operative would also be a dominant force in relationships with other groups, as it controlled access to food such as preserved *Typha* rhizomes for trade, ceremonies and travel, and played the major role in producing valuable items such as *Typha* fibre string and nets. The images gifted by Krefft and Becker of the proud girls and senior women allows us a rare glimpse of 'co-operative' members (Figures 8.15 And 8.16). This takes us back to Chapter 4 where Wrangham & Conklin-Brittain (2003 :41-42) postulated that changes in cooking and food distribution would be reflected in new social relations.

Figure 8.16 Krefft's Watercolour of 'three girls' on the Murray River 1856-7 (Mitchell Library Picture File PDX9)

Figure 8.17 Women Mourning, Balranald, Murrumbidgee River, 1860 (Becker in Tipping 1979)

8.7 INSCRIBING THE PLAINS

The data for size, roundness and moundednesss of the Hay Plain mounds and other areas with mounds suggests that different areas have different 'styles' or templates of mound size and shape, but that cluster size is not a 'style' attribute. The lack of roundness and moundedness of the otherwise similar Menindee ashy deposits corroborates that the Hay Plain mounds are deliberately shaped to cultural templates or 'styles'.

The Hay Plain landscape was spatially arranged and composed with constructed features which carried information about diverse aspects of cultural life including land tenure boundaries, individual ownership of constructed features such as weirs, pathways marking approved routes and linking important places, burial huts, mounds and/or sculpted rings indicating the burial places of significant males, mounds marking important occupation areas, ceremonial features known as burbang or bora rings and excavated wells or reservoirs. As the Hay Plain is devoid of rocks for painted or engraved art, another type of mnemonic was used. Trees provided some visual cultural information along the rivers, but the sculpted earth constructions formed the major elements of the cultural landscape, particularly on the flat plains. From this viewpoint, shaped or styled mounds are a subset of the overall pattern of sculpting earth to impress cultural messages.

The constructed landscape elements overlay the ideational or storied landscape that was 'sensually inscribed' with sounds, smells and visual triggers of memory and understanding (Langton 2002:254). Landscape features such as the flat treeless plains and the reed beds provide visual and sensual triggers for the stories that connect the present occupants with their ancestors and the creators or *Story* Beings.

Current perspectives of landscape elaborate how constructed features such as mounds act as a memory trigger about ancestors perceptions and actions, leading to the current occupants feeling of identity, rights and obligations. Mounds, particularly when seen as mirages, impress the vast scale and flatness of the plains, mounds give a vantage point to view the landscape, mounds contain messages about past events and management of resources. Non-Aboriginal landowners also interpreted aspects of the landscape in parallel ways by building on mounds, placing roads on traditional

pathways, and planting crops in former wetlands.

Many of the visual messages are directly related to the small land-tenure groups, such as potential canoe trees, ring trees, the weirs, dams, the most impressive burials, and ceremonial grounds. These belonged to the major male players. However, other aspects such as mounds and the paths linking I have interpreted as having more to do with women. The majority of women in any 'camp' or land-utilising group were not part of the land-tenure group, but married into it. However, women were the significant operators in the managing and harvesting of the dense root crops associated with the mounds. It is thus postulated that the mounds signal a female co-operative tenure based on the management, harvesting and heat retainer cooking of dense predictable wetland foods such as *Typha* rhizome. The exogamous system would result in the export of knowledge about the management, harvest and cooking of root crops, that is, the export of mound building. This exporting of the knowledge and the associated constructed cultural landscape template, would result in an outward movement of mound building from managed swamps and reed beds into new landscapes. Thus the mounds in the Macquarie Marshes 500 kilometres north of the Hay Plain may reflect the export of cultural information into a new area via marriage networks. Trade and exchange is often considered in the context of male dominated systems of archaeologically visible trade items such as ground edge axes, but mounds inform us about the exchange of ideas.

The mounds of the Hay Plain, and in particular the very large rapidly built mounds of the Hay Plain Southwest such as Ravensworth 3 and Tchelery 1, provide evidence of a landscape managed to maximise the dense predictable wetland foods such as *Typha*. This rapid build up and the large numbers of mounds and associated burials indicates changing patterns of plant use, wetland use, and sedentism. Such changes began before 4,000 BP on the Hay Plain Southwest. The ethnographic evidence pin points ways of managing the plant resources including firing, water management, spacing plants and harvesting at the time of peak carbohydrate content. Ethnographic evidence indicates that changing relationships with the wetland plants was largely driven by women. It provided a predictable staple and increased sedentism, that enabled building of infrastructure such as fish weirs, making of trade items such as nets (Krefft 1866a), and preserved food for ceremonies, gatherings and travel. And as Curr mentions, it also made it easier to bring up children. Women were the specialist knowledge holders and undertook management, harvesting, preparation and

cooking of plant foods, and it is therefore suggested it was women who largely constructed the mounds. Women were specialists in their knowledge of plants and trade partners as they were largely responsible for the fibre and nets that along with reed spear were the main trade items for people of the flat stoneless plains. Large scale cooking in mounds created female co-operatives, which led to a change in relationships between women, and between women and men, both within local groups and between groups. These roles and the increased sedentism drove a change in gender relations, which has left visible reminders in the form of mounds.