

AN OPEN SITE SURVEY OF KOOLBURRA PLATEAU, CAPE YORK PENINSULA

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INTRODUCTION

This paper describes the execution and results of an open site survey in the Koolburra Plateau of Cape York Peninsula (for a detail of study area see Flood 1986, this volume). The objective of the survey was to assess the nature and distribution of surface sites on and in the immediate vicinity of the plateau. It aimed to do this through an intensive examination of selected parts of the Echidna Creek catchment.

SAMPLING PROCEDURE

The survey strategy intended to provide reliable results without overextending the resources available to the project. To do this, parts of the Echidna Creek catchment were examined using simple random sampling (Redman 1974).

The idea underpinning this method is that every point in the area of concern has a statistically known (and roughly equal) chance of being selected for study. Its strong point in studies such as the present one is that it does not require any prior knowledge of, nor major assumptions about, the distribution of the thing to be sampled. In short, we used simple random sampling because nothing was known about the surface archaeology of the area (see also Robins 1984).

The method has its weaknesses, not the least of which is that it does not allow control of areal coverage. This means, for example, that one cannot take into account environmental variability which may have

one cannot take into account environmental variability which may have affected prehistoric landuse strategies and/or access problems, archaeological visibility and so forth. More sophisticated techniques such as stratified or systematic sampling (Redman 1974) could have been used to give a degree of control of the spread of areas to be examined. However, they require the sort of prior knowledge which was lacking in this instance and/or some major assumptions which were inappropriate to make in a first-approximation survey. Moreover, prior experience had shown the writer that despite a technical lack of control, simple random selection nearly always produces an acceptable geographic spread of survey units and that problems of accessibility can largely be avoided by selecting extra, "reserve" units to be used when necessary.

In designing the survey, the catchment of Echidna Creek was defined to the nearest 500m on a 1:500,000 topographic map. The 8km² enclosed was divided into 0.25km² (500m on a side) survey units. Twenty-five percent (n=8) of these units were selected for examination. The 25% sample fraction was decided upon as a compromise between the extent of coverage - and thus the robustness of results - and available time. Selection was done by sequentially numbering each survey unit (west to east, north to south), putting pieces of paper with corresponding numbers on them in a hat, jumbling them, then making a blind choice without replacement of nine numbers.

The ninth selection was a reserve unit to be used if problems of accessibility prevented the survey of one of the primary selections. As anticipated, the lack of control of coverage was not a hindrance, as selected units fell in each of the major environmental zones in the study area; two on the plateau top; two in the uppermost section of creek valley; two abutting the creek just outside the entrance to the valley; and two in the flat open country away from the creek outside the valley entrance (Figure 1).

EXECUTION

The boundaries of the survey squares were located on the ground from the 1:500,000 topographic map and aerial photographs. There was no difficulty in this as the country is relatively open and even minor features of the landscape show on the photographs and are readily identifiable at eye-level.

Each unit was systematically examined by field crews walking up and down the square, in line abreast and two arm's length apart, until the area had been completely covered. Again, the nature of the country made this task reasonably straightforward. In most survey units, the ground surface is sandy, with almost no natural stones in the valley and mostly large and clearly natural blocks of sandstone on the top of the plateau. Groundcover is usually sparse and patchily distributed, there is little organic debris on the ground surface, and shrubs and trees tend to be openly spaced. The only areas moderately difficult of access were the slopes of the scarp defining the edge of the valley floor, where steepness and an abundance of wasting sandstone slowed progress. The high level of accessibility meant the reserve unit was not needed. It also meant archaeological visibility was good in all units, although the rock scree along the scarp required more careful scanning than other areas.

As well as examining the eight randomly selected units, the survey recorded two surface sites which were found in the course of work around the Echidna Dreaming rockshelter (Flood 1986, this volume). Recording these sites avoided the "Teotihuacan problem" which can arise in probability sampling when obvious sites not in the sample area are disregarded (Flannery 1976:133-136).

RESULTS

In addition to a number of isolated flaked stone artefacts, the survey found two scatters of flaked stone artefacts, one associated with grinding grooves and an engraving in sandstone; a linear complex of large sandstone manuports; and six small rockshelters containing rock art. The art sites are not discussed here. The two sites found near the Echidna Dreaming excavation are described at the end of this section.

Site 1.

The first site was found in survey unit 22, at the head of Echidna Creek valley (Figure 1). It is a sparse, low to very low density scatter (<1-4 items/m²) of flaked stone artefacts dominated by small to very small (<1-3cm long) unretouched quartz chips. Some chert pieces, one core on volcanic rock, and one piece of ochre were also recorded.

The artefacts lie amidst abundant fragments of country-rock on a gently sloping area of about 100m by 150m at the end of a low colluvial interfluvial extending from the base of the escarpment. There are few shrubs or trees in the area, but grass covers much of it at varying densities. The entire site area has been severely deflated, and many artefacts and other stones are pedestalled 1-5cm above the present ground surface. No structural features such as hearths were observed.

Site 2.

This site was located on the banks of Echidna Creek in survey unit 11 (Figure 1). Like Site 1, it is a sparse, low to very density scatter of predominantly flaked stone tools. Most items are small (1-3cm long) and wider than they are long. Two large (9-12cm long) cores, two hammerstones, a ground flake and a ground river pebble were also observed. The main raw material is chert, with some silcrete, quartzite and quartz.

The artefacts are spread over an area of about 25m square on an eroded sandy surface and exposed sheets of sandstone on both sides of a permanent waterhole. None were found in situ in the sections of the creek bank. The distribution of material within this area is highly variable, and is almost certainly a function of erosion and soil movement rather than past human behaviour.

In addition to the stone artefacts, the site contained a pair of pecked macropod feet and a number of ground grooves in the sandstone sheets on the edge of the creek. No stone artefacts could be directly associated with either the engravings or the grooves, although the

ground flake mentioned above suggests the grooves may have been used to grind stone artefacts, amongst other things. There were no structural features associated with either the artefact scatter or the grooves and engraving.

Site 3.

Site 3 comprises a complex of large (approx. 25-30cm on a side) and roughly cubic sandstone blocks, each of which has at least one surface modified by pecking and/or grinding. The blocks are all in survey unit 10, in the vicinity of a marked bend in the creek (Figure 1). They are spaced from 50m to 100m apart and form a line approximately 650m long running more-or-less parallel to, and about 25m from, Echidna Creek. No other artefacts (or stones of any sort) or structural features were found in close proximity to the blocks, but a stone-ringed hearth (possibly post-contact) and a few isolated flakes were located nearby in survey unit 2. The site complex is also only about 1km from Site 2.

Although the vegetation immediately surrounding the site is predominantly open eucalypt forest, all the blocks are in, or within 100m of, extensive groves of pandanus. This suggests the stones may have been used (by women?) to process pandanus drupes. Given the proximity of the complex to Site 2, it is also possible that the two are contemporaneous and perhaps complementary. It should be noted, though, that the present abundance and distribution of pandanus - and therefore their apparent association with the pecked blocks - may be the result of feral pigs and perhaps cattle spreading pandanus seeds around. Unfortunately, it was not possible to recover any one of the blocks for more detailed study. Until residues which may be adhering to the surfaces of the blocks are analysed, little more can be said about the possible function of the artefacts and the nature of the site complex.

Site 4.

This site is one of those found "outside" the sample survey. It is located immediately in front (or north) of Echidna Dreaming rockshelter, in survey unit 20 (Figure 1). It is very similar to Sites 1 and 2, being a sparse and very diffuse scatter of flaked stone artefacts. The bulk of the cultural material is small, unretouched quartz flakes. It is interspersed with a few chert flakes and quartz and chert cores. One hammerstone was also found. As at Site 1, the artefacts are in a very high density background accumulation of non-artefactual stone, most of which is sandstone and quartz. Although no hearths or other features were found, there is a scarred tree in the site area.

The site covers an area about 100m square on a gradually sloping apron which extends out from the rockshelter towards Echidna Creek. Vegetation consists of patchily distributed clumps of course grass and scattered shrubs and trees. The entire area has and is being sheet eroded, which has severely effected the distribution of artefacts. Most are found clustered in minor rills and/or on the upslope side of sandstone cobbles, logs and clumps of grass. Whether the surface scatter derives wholly or partly from - or is otherwise associated with - assemblages buried in the rockshelter cannot be assessed.

Site 5.

Site 5 is the second site found close to the Echidna Dreaming site. It is in survey unit 20, on the bank of the creek just 100m south (upstream) of Site 4 (Figure 1). Like it and the other surface scatters, this site contains a relatively small number of flaked stone artefacts distributed at varying but always low densities across the site area. Most artefacts are small flakes, although a few cores and one flat sandstone slab with a dished and pitted surface were noted. The main raw material in the flaked assemblage is quartz, with a minor component of chert and quartzite.

Discounting the difference in on-site landforms, the setting of Sites 4 and 5 are almost identical. Site 5 is also being eroded in the same way as Site 4, which means artefacts were being redistributed in a similar manner and were found in similar places.

DISCUSSION

In view of the severity of disturbance and lack of time-diagnostic artefacts and structural features in the sites, it is difficult to draw any inferences regarding the nature of the activities which may have been carried out in any of them except perhaps Site 3. An hypothesis concerning Site 3 has been offered but, as noted, it cannot be tested at present.

The same factors - particularly the absence of fossiles directeurs allowing even coarse, "order of magnitude" temporal control - also make it hard to assess the information on site location patterns gathered by the survey. Certain low-level generalizations can be made. Throughout the period the open sites were occupied, relatively flat but not necessarily stone-free places close to Echidna Creek were used for a variety of as yet undetermined activities. All sites would have had access to water for at least part of the year, as well as physically unimpeded access to the full range of environmental zones in and around the plateau.

Sites are clustered in two distinct localities: the uppermost reaches of the valley in the vicinity of Echidna Dreaming rockshelter, and the open country just beyond the entrance of the valley. No trace of prehistoric activity was observed on the top of the plateau and only isolated artefacts were seen between the two "favoured" localities and away from the creek. This pattern is non-random. If sites were distributed randomly in relation to features of the landscape, 25% of sites (roughly one) should occur in each of the four environmental zones examined. As it is, 100% of sites were found in two of the zones. It does not require a statistical test to highlight the strength of this bias. Further, the overall characteristics of the distribution pattern do not appear to be the product of natural or anthropogenic post-depositional landscape change or variations in archaeological visibility. Thus, it can be safely suggested that the distribution of sites is the result of prehistoric choice in camp location (Lilley 1985). As there is little variation in the range and distribution of major environmental zones in and around the plateau, it can be predicted with a reasonable certainty that this site location pattern is characteristic of the whole Koolburra area.

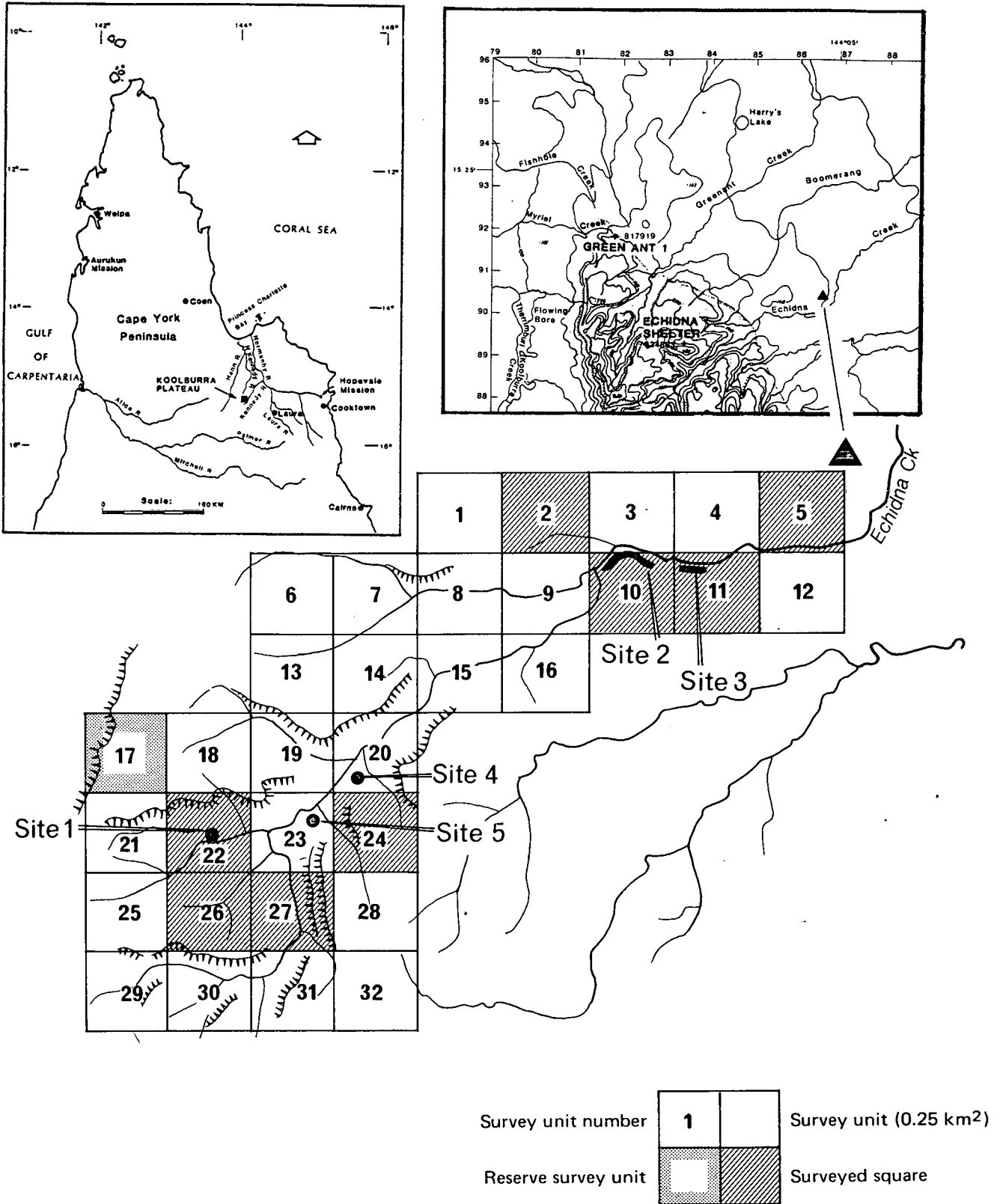


Figure 1. Map showing locations of survey units and sites.

CONCLUSION

Conducting the first systematic open site survey in the Laura region enabled the Echidna Dreaming project to outline the nature and distribution of surface archaeological material in the Koolburra Plateau area. Because most of the sites found by the survey have been severely disturbed by erosion, they are of little scientific value in and of themselves. However, the knowledge gained of their distribution is of worth, in that it provides a foundation for more detailed future studies.

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