

Appraisal of archaeological studies at Sandon Point, New South Wales.

by

**Dr Peter Hiscock,
School of Archaeology and Anthropology,
Australian National University,
Canberra, A.C.T. 0200**

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1. AIMS OF THIS REPORT

The objective of this report is to provide an evaluation of archaeological investigations at Sandon Point, a coastal locality north of Wollongong. This evaluation contains two components: 1) a review of the archaeological / scientific evidence of artifacts and other signs of indigenous occupation, and 2) comments on the information that their presence may reveal and the consequences of that information for statements of archaeology significance of the locality. Although the author (Hiscock) visited Sandon Point on Monday 26th of August 2002, the substance of the evaluation presented here involves a critical examination of the evidence presented in reports of previous archaeological examinations of the site. Navin Officer Heritage Consultants Pty Ltd (hereafter called Navin Officer) investigated the locality in 1992 and 1993, and those and subsequent investigations are described in Anon (2001a, 2001b, 2001c). This report focuses on evaluating the evidence revealed by Navin Officer and the inferences it made about the locality.

2. KEY INFERENCES IN PREVIOUS INVESTIGATIONS

Previous investigations of Sandon Point have employed a number of methods to infer characteristics of the archaeological material, and the results of the application of those methods have been employed by archaeologists investigating the locality to arrive at a number of conclusions. The key inferences that have been reported include those summarised as follows.

A two day surface traverse by Navin Officer employees led to the conclusion that the site was 'highly disturbed', with 40% 'substantially if not completely disturbed (Anon 2001a:15). Based on limited stratigraphic evidence for 'intact archaeological deposits' and perceived patterns of site distributions in the Illawarra region Navin Officer (Anon 2001a:19) anticipated, prior to subsurface investigations, that "...the likelihood of finding scientifically *significant* Aboriginal sites in low".

While suggesting that some artefacts may exist in the development area Navin Officer (Anon 2001a:19) developed the argument that any material within the study area would represent 'small temporary campsites'. However, Navin Officer argued that the abundance of archaeological material was likely to be low, saying

The results of the excavations in Stage 1 of the Development site confirm that the area had little or no potential to contain archaeological sites... (Anon 2001a:19).

To support this conclusion Navin Officer reports referred to test excavations carried out in Stage 1. Because only two artefacts were recovered from the excavations, Navin Officer argued that there was a "...very low density of artefacts which may be the remnant of an artefact scatter focussed along the crest of the Sandon Point ridgeline, further to the south" (Anon 2001b:2). Navin Officer further argued four points about the artefacts identified in Stage 1:

1. The density of artefacts was so low as to not warrant the status of an archaeological site, Navin Officer describing the material as a 'background scatter' (Anon 2001b:32),
2. The low artefact numbers meant "...the recovery of a statistically viable sample for scientific analysis is impossible" (Anon 2001b:32),
3. The small number of artefacts did not include specimens that were used or displayed secondary flaking, and
4. The presence of European items at depth in the excavations were interpreted as indicating disturbance of sediments from different time periods.

Drawing these inferences together Navin Officer (Anon 2001b:32) concluded:

The low artefact numbers means that the recovery of a statistically viable sample for scientific analysis is impossible. When this is combined with the background level of artefact incidence, their disturbed and mixed sub-surface context, and the lack of evidence for secondary flaking or any actual utilisation of the artefacts as tools, it must be concluded that the known and potentially occurring artefactual material within Stage 1 has no scientific value or significance.

It was concluded by Navin Officer that the area offered no potential and therefore did not warrant further assessment: "...this area is still of relatively low potential and is not characteristic of areas likely to reveal scientifically significant archaeological sites" (Anon 2001a:4-5).

This evaluation of the locality was upgraded when Navin Officer (2001c) investigated Stages 2-6. A series of backhoe excavation pits spread across one portion of the development area provided an insight into stratigraphy and artefact assemblage at this point. Geo-archaeological investigations confirmed that many localities within the samples area were disturbed, both by natural and historic human processes. However, the existence of disturbing processes appeared not to necessarily involve major destruction of original landsurfaces. For instance, Navin Officer (2001c:59-60) state that, “In the first phase significant coal fines/gravels and slag have been deposited locally, but with minimal disturbance to pre-existing landsurfaces and stratigraphy”. Evaluation of the impact of disturbing processes on pre-contact archaeological deposits, and the location of comparatively intact areas required further specific investigation according to Navin Officer (2001c:59). As a generalized statement Navin Officer (2001c:60) suggested that artefacts on the upper slopes were vertically mixed to a degree not likely on lower slopes.

Another disturbance process documented in the material recovered from excavations in Stages 2-6. Navin Officer (2001c:47-48) report a high proportion of artefactual fragments and specimens displaying fractures distinctive of thermal shock. The effect of excessive heat is to break artefacts into smaller fragments, making it more difficult to extract information from them.

In its analysis of recovered artefacts Navin Officer (2001c:45) identified an inverse relationship between the topographic height of the test pit and the density of artefacts. This was thought to either be an indication of preferred occupation by Aboriginal people of lower, flatter locations or alternatively of disturbance and downslope movement of artefacts.

A total of 991 artefacts were recovered from the excavations in Stages 2-6, and Navin Officer (2001c:50-58) extensively discuss the potential of the artefacts at the site for understanding stone artefact manufacture and regional land use. The uses and procurement of different raw materials are particularly emphasized as issues that could be investigated at Sandon Point.

Conclusions drawn by Navin Officer (2001c:61-62) on the basis of these findings include:

- “The Sandon Point Site contains a fairly rich assemblage representing a range of stone artefact manufacturing techniques.”
- “The assemblage shows significant spatial and vertical patterning in the distribution, density, size and appearance of stone artefacts”.

- Site formation processes that may have contributed to or even largely determined the vertical and spatial patterning of stone artefacts are: ploughing/discing and clearing, and expansion/contraction of sediments.
- “The vertical and spatial distribution of artefacts at Sandon Point appears highly disturbed and is considered unlikely to preserve information about either the original location or timing of past human behaviour. Consequently, the Sandon Point site is unlikely to preserve the “cultural stratigraphy” which is fundamental to descriptions of changing site use or stone artefact manufacture through time. It is therefore argued that vertical and spatial patterning in the deposit preserves little in the way of information about the location or changing nature of activities carried out at the site”.
- “In addition to site disturbance processes, attritional processes have acted to diminish the information potential of the assemblage. In particular burning is identified as the main source of fragmentation in the Sandon Point assemblage, with breakage during manufacture as minor secondary process”.
- “The Sandon Point site can be described as possessing low to medium level research potential for understanding the regional system of stone artefact reduction, transport, curation and discard”.
- “While further excavation would be of little value given the level of vertical disturbance documented above, the recovery of a larger sample of stone artefacts could assist future research into regional patterns of Aboriginal stone artefact manufacture and land use”.
- “Based on these findings, an appropriate management strategy for the conservation of the scientific values of those parts of the site subjected to development impact would be the salvage recovery of further sample of artefacts...”

Whilst many of the observations reported by Navin Officer provide a valuable insight the archaeology of Sandon Point, my review of its reports indicate that their conclusions substantially undervalue the potential of what is undoubtedly a large and important site, and their conclusions were premature, being indicative in nature rather than conclusive and comprehensive. The reasons for this statement can be explained by examining:

- the way field sampling methods were employed to estimate site size (section 3),
- the overemphasis on the degradation of the site through disturbance processes (section 4),
- the preliminary and limited nature of the significance assessment (section 5).

3. EFFICACY OF THE FIELD SAMPLING METHODS

This section reveals that although Navin Officer obtained indications of substantial assemblage sizes in its fieldwork, the inferences about the archaeology did not reflect a grasp of the abundance of the material that existed.

Stage 1 investigations by Navin Officer (2001b:3) were used to conclude: “The density of Aboriginal artefactual material within the Stage 1 development area is very low and has no archaeological value or significance”. However the shovel test pits they dug on the southern edge of the area were so small (30cm x 30cm) that it is remarkable that any material was found at all; and the existence of artefacts in such small excavations indicated substantial densities of artefacts. The presence of a single artefact in such a pit represents an artefact density of 11.1/m², and the discovery of two artefacts in five pits indicates an average density of 3.7/m². If the same density occurred throughout the southern portion of Stage 1 (for which the spade pits are the only sub-surface record), **an artefact assemblage of nearly 20,000 specimens may have been present on the southern edge of Stage 1.**

To conclude that this represented a “very low density” of material or had no value to archaeology is to understate the situation to a degree that cannot be sustained by the evidence. The description of average artefact densities of 3.7/m² or an estimated assemblage of 20,000 specimens as ‘background scatter’ is a usage not normally seen in the archaeological literature. Furthermore, this reveals that Navin Officer’s (2001b:32) assertion that a statistically viable sample was impossible to obtain is unlikely to be correct. The artefacts were probably in low numbers because so little excavation had occurred; not because few artefacts existed. This small sample of what was probably a large assemblage also explains why no specimens with secondary flaking were recovered. It is a well established principle that rare items such as retouched flakes are unlikely to be recovered from small assemblages (Hiscock 2001) and their absence from stage 1 is best explained in terms of the inadequate volume of test excavations. **Further test excavations were required to establish the size and distribution of the assemblage of stone artefacts in Stage 1 and their scientific value.**

A similar pattern of under-stating the abundance of archaeological material took place in the subsequent investigations of Stages 2-6. There Navin Officer (2001c:25-26) employed an excavation methodology that consisted of the following steps:

- A backhoe excavated a hole approximately 2m by 0.82m in a series of arbitrary units 0.05-0.1m deep.
- A 50 litre sample of sediment was taken from each excavation unit for sieving, giving a 27% sample of that unit, and if artefacts were discovered in that sample an additional 50 litre sample was sieved, resulting in a 54% sample of the unit.
- Material in these samples were wet sieved through a 3mm mesh.
- Thirteen Test pits were excavated in this way, yielding an assemblage of 991 specimens (Navin Officer 2001c:36)

These methods have a series of consequences that were not discussed by Navin Officer (2001c):

1. The area across which these pits were placed is approximately 150m by 200m, an area of 30,000m². The total area of test pits was approximately 21.3m², a sample representing only 0.071% of the zone being examined by these excavations. However, since not all of the test pit material was sieved, this figure can be reduced by nearly half (54%) to give an estimate of the area examined by these excavations: 0.0384%. (In fact this is a generous estimate since not every excavation unit had a 54% sample taken, so the actual average is lower). **This figure represents a very small sample from which to make generalisations about stratigraphic, taphonomic and behavioural patterns across Sandon Point.**
2. The average density of artefact fragments recovered from the test pits was 47/m². Since this represents a 54% sample the likely average artefact density can be recalculated as 87/m². If this average density had been repeated across the area in which these test pits were dug, which I would predict, it can be estimated that more than 2,600,000 artefacts may have been present in that portion of the Stages 2-6 area alone. If these densities existed in the rest of the Stages 2-6 area, we can estimate that more than five million stone artefacts were present on this part of the point; but even without such an extrapolation the data presented by Navin Officer (2001c) demonstrate that **more than two and a half million artefacts existed in Stages 2-6, of which less than one thousand were recovered and studied.**
3. The strategy of doubling the excavation unit sample when artefacts were noticed meant that an accurate indication of vertical and horizontal artefact distribution was not

obtained. In levels that had high densities of artefacts this procedure would have led to the recovery of a larger collection of artefacts, whereas in levels with low artefact densities this procedure would have decreased the likelihood of artefacts being recovered. In order to find the vertical and horizontal limits of artefact distribution in the deposit, the strategy would have need to be reversed, to thereby give a greater chance of obtaining artefacts from parts of the deposit that contain artefacts in low densities. **The sampling procedure acted to limit rather than reveal the distribution of material within each test pit.**

These inferences about the likely size of the artefact assemblage and the proportion that was obtained by archaeological investigations lead me to a different conclusion about the Sandon Point archaeology contained in the development area of Stages 1-6:

- Measured in terms of the number of artefact types, this is a remarkably large accumulation of stone artefacts. Representing at least 2,500,000 artefactual fragments, and perhaps more than 3-5,000,000 artefact fragments, **this site is one of only three or four coastal sites in NSW with artefact assemblages of this size**. This not only makes it a rare site but also creates many research opportunities simply by virtue of the large assemblage.
- The range of raw materials and the diversity and complexity of assemblage patterns likely to be found among several million artefacts is highly unlikely to be adequately measured in a sample as small as the one retrieved by Navin Officer.
- The preceding two points suggest that **there may be substantial information potential in this enormous assemblage and that the investigations by Navin Officer represent only a preliminary and minimal examination**. An adequate evaluation requires substantially more investigation of the locality.

4. SITE FORMATION ISSUES

During the last two decades it has become clear that archaeological sites are formed in complex ways, and as a consequence it is extremely dangerous to interpret sites in simple ways that might have commonsense appeal. Archaeological theory and practice has largely been re-oriented to accommodate this realisation (see Gifford 1981; Schiffer 1976, 1987; Sullivan 1978; Villa 1982; Wood and Johnson 1978); with a focus on the processes that

intervene between the human occupation of a site and the manufacture and use of artefacts (often called the 'systemic context' by theorists) and the objects recovered at a much later time by archaeologists (called the 'archaeological context'). Many processes have now been identified (Schiffer 1987) and their important can be characterised as follows: the greater the number and severity of these processes, the less the archaeological material will reveal of the humans who first created it. Consequently, it would normally be expected that any description and interpretation of archaeological must examine the possible effects of these processes.

Consistent with the focus of archaeological theory Navin Officer (Anon 2001a, 2001b, 2001c) investigated and gave prominence to the issue of disturbance/alteration processes acting on the Sandon Point deposit. As described above the conclusions of Navin Officer include three key statements about the processes acting at the site:

- The deposit has been highly disturbed and was considered by Navin Officer to be unlikely to have preserved information about either the original location or timing of past human behaviour,
- Attritional processes had acted to diminish the information potential of the artefact assemblage, and
- Site formation processes had contributed substantially to the observable vertical and spatial patterning of stone artefacts.

However, **although the concern for an understanding of disturbance processes at this site was appropriate the judgment about the severity, uniformity and consequence of disturbance processes was both premature and unnecessarily negative.** Two issues here are the uniformity of disturbance processes, and the adverse nature of their effect.

4.1 Uniformity of disturbance processes

There is little doubt that multiple processes have substantially disturbed this locality over at least the bulk of the historic period. However this conclusion does not necessarily imply that the disturbance processes have been equally severe over all parts of the Stage 1-6 development area, or areas adjacent to it. Recalling that the backhoe pits in Stages 2-6 covered a mere 0.071% of the area in which they were located it is clear that had there have been one or more small intact or less disturbed locales they would probably not have been identified. The conclusion that there was no information about "cultural stratigraphy"

preserved in the development area is based on the assumption that observations of an extremely small proportion of the area were applicable to all portions of Sandon Point. **Further excavation would have been required to yield a sample that could have talked reliably about the uniformity of disturbance and the likelihood of minimally disturbed areas .**

In addition, while some disturbance processes, such as thermal fracture, are well documented others are not unambiguously demonstrated. For example the conclusion of Navin Officer that spatial distributions of artefacts reflects disturbance is an assertion, not an inference that arises evidence collected in the field. **It is not reasonable to conclude that because some of the distributional patterns are explicable in terms of the outcome of disturbance processes that they must necessarily result from those mechanisms, when the same patterns could conceivably result from the location of Aboriginal activities.** Specific and detailed technical analyses, such as micro-debitage, conjoin and sediment particle size analyses, would need to be carried out for each locale within the development area to determine whether material had been relocated a considerable distance and whether or not the disturbance processes alone can explain all of the observable patterns.

4.2 Consequences of disturbance processes

More importantly, **the documentation that disturbance has occurred does not demonstrate that all information has been removed from the archaeological deposit.** While taphonomic processes may complicate the interpretation of archaeological material it is recognised by many researchers that these processes need not impede interpretation of archaeological and at least in some cases may add information and thereby create opportunities for drawing inferences about past behaviour (eg. Auban et al 2001; Barton et al 2002; Hiscock 1990; Jones 1980). It is essential to note that virtually every archaeological site has suffered from multiple disturbances, but that archaeologists are still able to extract important information from the recovered material. In Australia the best illustration of this reality is the famous site of Kenniff Cave, the site at which early Aboriginal occupation and cultural change was first demonstrated. Richardson (1992) has shown that even within the protected environment of Kenniff Cave artefacts have moved vertically distances as much as 35cm, vertical distances of approximately the same magnitude as the movements implied by Navin Officer for Sandon Point. The existence of

vertical and spatial relocation of objects might even be expected to be greater at more intensively occupied, culturally important sites. For instance, it is known that in many localities greater length of occupation and/or frequent reoccupation of settlement areas are accompanied by greater alterations to the site as people cleaned living spaces and formalised storage and disposal routines (e.g. Jones 1980). These disturbances are not to be ignored, but the mere presence of disturbance is not an adequate indicator of the information content that has been lost.

An example is the observation by Navin Officer (Anon 2001c) that a portion of the artefact assemblage has been fragmented by exposure to excessive heat. This is a valuable observation and undoubtedly does hinder the identification and recording of artefact categories and dimensions (although since the fragments could be conjoined it may not prevent such investigations). However the presence of thermal damage is also known, at other sites, to have added information such as the location and frequency of campfires (eg. Hiscock 1990). Since a site with millions of artefacts, such as Sandon Point, was probably a focus of ancient Aboriginal occupation it would not be surprising that campfires and other fires were common, and the thermal shattering of artefacts could conceivably be employed as a measure of the intensity and focus of those fires. This example reveals that **the conclusion of Navin Officer that the existence of disturbance processes removes information from the assemblage is a generalisation that need not be true for some or all of the Sandon Point material, and more detailed studies needed to be completed before just a conclusion could be sustained.**

A similar concern is warranted for Navin Officer's (Anon 2001c) inference that the site "preserves little in the way of information about the location or changing nature of activities carried out at the site". Even if vertical and horizontal redistribution of artefacts had occurred to such an extent that the assemblage no longer preserved any original patterning, something that has not been demonstrated, this would only inhibit intra-site comparisons, not comparisons between sites. In this circumstance an assemblage as large as Sandon Point would still be of immense value in understanding prehistoric changes in Australia. An example of New South Wales most famous archaeological site, the World Heritage listed Lake Mungo, can illustrate the potential. At Lake Mungo the natural disturbance processes mean that most artefact assemblages are not precisely dated, they consist of artefacts made thousands of years apart and often an artefact assemblage may span at least 5-10,000 years. Although dating is imprecise such assemblages can still be

compared to each other to examine the changes that have taken place over tens of thousands of years. Even if the Sandon Point assemblage had not internal chronological control it would still represent an assemblage of artefacts that had accumulated over perhaps 6,000 years, which could be compared to assemblages from other sites as a way of understanding long-term cultural change, dealing with questions that may be scientifically at a national or international level (see Stern 1994 for an example of the international value of site with even less chronological resolution). Consequently, there is nothing in the arguments advanced by Navin and Officer that demonstrates the extraction of important information from Sandon Point is impossible. Such a conclusion is not justified on the basis of archaeological investigations that have been carried out to date.

5. EVALUATING SCIENTIFIC SIGNIFICANCE

The evaluations by Navin Officer (2001a, 2001b, 2001c) of the **Scientific Significance** of Sandon Point follow the convention of judging the significance of an archaeological site on the basis of its capacity to provide information about current and significant questions when subjected to scientific investigations, and the rarity of sites with similar potential. However the considerations of significance by Navin Officer do not take into account a sufficient range of research questions, nor adequately judge the possible information that remained in the Sandon Point assemblage. As discussed above the site may not be as disturbed as Navin Officer conclude, and even if it were there are a number of ways in which the material may add substantial information to our understanding of the past. The proposition advanced by Navin Officer that the Sandon Point material may provide information about stone artefact reduction, transport, curation and discard is undoubtedly correct. Such information would also facilitate testing models about ancient economies, social interaction, trade, and landscape use. Navin Officer provides no persuasive reason as to why the questions that can be addressed operate at only a local and regional, rather than national or international scale. Navin and Officer also fail to give reasonable emphasis to the rarity of a site such as this, containing such a large and diverse artefact assemblage. **Given the minimal nature of available information it is not possible to unambiguously revise the significance evaluation, although it seems likely that the site assemblage may be of at least national importance for investigating some archaeological**

questions, but it is clear that the significance evaluation that was provided by Navin Officer is contentious and prematurely developed.

6. CONCLUSIONS

Several conclusions can be drawn about the existing archaeological investigations at Sandon point:

- **Archaeological investigations have revealed that the development area contained an enormous archaeological site, containing several million artefact fragments. Such sites are extremely rare along the Australian coast and even if the context of these artefacts was heavily disturbed this represents an assemblage of unusual and valuable qualities. The statements by Navin Officer do not give adequate acknowledgment to the size and potential of such an assemblage.**
- **Multiple processes disturb the site but the archaeological investigations should be considered inconclusive as to the extent and intensity of disturbance processes or the degree of information that remains in the assemblage. The conclusion that little or no information about prehistoric activities remains is not justified on the evidence presented.**
- **The archaeological investigations have provided a useful initial characterization of the site but are not extensive or detailed enough to develop final statements of scientific significance.**
- **The preliminary judgment of the archaeological material contained within Stages 1-6 underestimates the likely potential of such an immense and complex assemblage. It remains possible, even likely, that this site should be considered of national importance for questions of ancient technology and economy.**

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8. DETAILS OF AUTHOR

Dr Hiscock is a Senior Lecturer and the Head of Archaeology at the School of Archaeology and Anthropology, Australian National University. He has been a University lecturer for 14 years, and is currently an Honorary Research Fellow of the Northern Territory University, and as a Research Associate of the Australian Museum. He has published one book, edited another book, and published more than 70 refereed journal articles and book chapters with international journals and book publishers. His research specialisation is the investigation of Australian stone artefacts and site formation processes.