

# ARCHAEOLOGICAL EXCAVATIONS OF FORMER SAND DUNES IN KINGSCLIFF, NSW – REVEAL TERMINAL PLEISTOCENE VISITATION

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## INTRODUCTION

The regional archaeological record of the Tweed-Byron region is dominated by late Holocene exploitation of the coastal environments. However, despite being on a major coastal route for initial peopling of Sahul, there is little evidence of pre-Holocene visitation. Here, we present the results of a compliance based archaeological excavation at Kingscliff Public School on the traditional lands of the Bundjalung people.

Regional studies over the past 35 years in the Tweed Valley are dominated by midden sites and artefact sites, most being identified in inner barrier and outer barrier sand dune contexts and along the margins of coastal waterways and estuaries. These occupation sites most frequently demonstrate occupation of the region by local Aboriginal people within the last 5,000 years, with few sites bearing evidence of Pleistocene occupation and use.

## METHODS

Excavations were undertaken in accordance with the following procedures:

- Excavation:
  - A grid of 1 m<sup>2</sup> test pits was established at suitable spacing (<20m) and dug in 10cm spits to culturally sterile depths or 1.5m below current surface (the deepest depth that can be reached without shoring systems and/or benching).
  - All sediment was dry sieved through a 5mm wire aperture mesh, and any historic and/or Aboriginal cultural material recovered, labelled and bagged for subsequent analysis and curation.
- Field documentation:
  - OSL samples were taken in areas where Aboriginal objects were found, and generally tried to bracket the deposit (to provide a maximum and minimum age).
  - Reduced levels of the top and bottom of the test pit were documented using a dumpy level against a known elevation.

The Bundjalung people of the Tweed region are the traditional owners of the study area and have lived in connection with the landscape for tens of thousands of years. As the cultural custodians, a range of Bundjalung and locally based Aboriginal traditional owners participated in the entire project.



Photo on left. OSL sampling undertaken in the truncated dune featured across the northern portion of the site (TP32), view north. Photo on right. EMM archaeologist collecting OSL samples in TP34, view southeast



Bundjalung traditional custodians and EMM archaeologist excavating at Kingscliff Public School October 2023, view southwest

Figure 1 above. Regional context of Kingscliff Public School with inset showing results of the salvage excavation (2023) with circled test pits highlighting the location of artefacts found at depth (>120cm below the ground surface).

Table 1 right. Salvage test pit information (2023) and summary of OSL ages recovered from the archaeological excavations. All uncertainties in age are quoted at 1σ confidence. Bold indicates preferred age for the sample.

## RESULTS

### Key findings:

- Eleven test pits were excavated in April (n=9 test pits) and October 2023 (n=2 test pits), totalling 16m<sup>3</sup>. The soil profile across the site represents a truncated dune deposit (consistent with the previous research at the site (EMM, 2021)).
- A total of 76 stone artefacts were recovered from the salvage excavations. They were primarily found near the surface of the deposit (n=51 in the first 10–30cm) with an additional 17 recovered between 40–60cm below the ground surface and 8 artefacts located between 110–130cm. The absence of artefacts between 60 and 110cm may indicate two separate occupation phases across the site.
- The artefacts identified at TP33, TP34 and TP35 at depths of 110–130cm below the current ground surface represent some of the oldest evidence of occupation in the region dated to at least 14,000–16,000 BP (TP32). The upper parts of the soil profile date to <5,000 BP.

### Chronology:

The lowest samples suggest an initial formation of the dune may be >150,000 based on small age populations in the lower samples. However, it appears that depths of 120–150cm below surface typically date to >27,000 and potentially ~56,000 based on CABAH-1652. There is some potential for a stratigraphic hiatus in the sequence at ~120cm below surface, with samples at this depth and higher generally found to be of terminal Pleistocene age (14,000–16,000). Indeed, depths of 100–120cm below surface from which lowest cultural assemblage was recovered appear to be bracketed by CABAH-1499 (~14,000) and CABAH-1500 (~16,000). Given the difference in ages at and below 120cm, it seems probable that the cultural assemblage is situated on former land surface that would have been present following the Last Glacial Maximum.

### Lithic analysis:

During the salvage excavations, 76 flaked stone artefacts were recovered that were found primarily in four test pits, TP27 (n=10), TP30 (n=18), TP31 (n=12) and TP37 (n=16).

All but 15 of the artefacts were recovered from the upper 40cm, and therefore situated within re worked and/or re deposited in modern stratigraphic units.

Of the 15 artefacts identified at depth, 7 were recovered from depths of between 50–60cm below the ground surface within TP27 (n=5), TP31 (n=1) and TP34 (n=1) and may date to ~8,000 BP. Two conjoining artefacts of brown chalcedony, which grade to a grey cryptocrystalline quartz, were identified in TP34 between 110–120cm below ground surface.

In combination with the conjoin (which indicates limited movement of cultural materials in the stratigraphic section), these eight artefacts appear unrelated to the assemblage found higher in the soil profile, and are of significant age, potentially representing Pleistocene occupation.

## DISCUSSION

The results demonstrate that the truncated frontal sand dune is sporadically present throughout the site (usually beneath varying levels of historical and modern fill that extend up to ~40cm below the current ground surface). A low density of artefacts was present throughout deposit to ~120cm depth that shows there were at least three phases of low density occupation at the site. The majority of the artefact assemblage (n=68) was found in the upper portion of the soil profile and either represents a transient or ephemeral use of the site (two occupation phases), or more probably the lower portions of a truncated soil profile within which a more extensive cultural assemblage may once have been situated.

Eight artefacts were recovered at depths exceeding 1m. These were found in one main location on the southern side of the original school building (within TP33, TP34 and TP35 in a ~20m<sup>2</sup> area) and represent a separate, older, Pleistocene (>14,000 BP) occupation of the surrounding region. They reflect an initial visitation to the site during the period immediately following the Last Glacial Maximum. These cultural deposits reflect one of the only Pleistocene sites in the region and are considered of high value.

Test pit (TP)	Depth of test pit (cm below surface)	Date excavated 2023	Number of artefacts (n)	Lab code	Spit	Depth (cm below surface)	Age (ka)
27	150	April	10				
28	150	April	1				
29	150	October	1				
30	100	April	18				
31	140	April	12				
32	150	April	1	CABAH-1499	10	100	<b>10,855±1,520</b> 14,200±1,545 76,760±15,020
				CABAH-1500	12	120	<b>11,255±1,875</b> 16,025±1,545 67,300±10,555
				CABAH-1501	14	140	<b>17,630±10,555</b> 27,740±3,135 95,515±12,955
33	150	April	2				
34	150	October	9	CABAH-1651	12	115	12,365±1,720 27,790±3,425 <b>57,050±5,575</b> 164,200±31,000
				CABAH-1652	15	150	8,125±1,325 30,260±3,585 <b>56,160±4,905</b> 96,560±10,175 196,560±29,310
34D*	50	October	0				
35	150	April	5				
36	145	April	1				
37	150	April	16				

\* Disturbed

## REFERENCES

EMM Consulting Pty Limited, 2021, Kingscliff Public School Redevelopment – Aboriginal cultural heritage assessment. Report prepared for Indigeo and Schools Infrastructure NSW.