

Phase Two Paleontological Heritage mitigation for Kadouw Leisure Estate, Sundays River Valley.

Prepared for: CEN IEM Unit

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Introduction

A Paleontological Impact Assessment was carried out between the 18th and 21st July 2009 as part of the Environmental Impact Assessment process for the proposed Kadouw Leisure Estate.

Abundant fossiliferous outcrops of the Early Cretaceous Sundays River Formation were identified where the Sundays River and its tributaries have cut through the quaternary land surface, with it's capping of conglomerates and calcretes.

The underlying sandstones, clays and weathered clays of the Sundays River Formation were found to be rich in marine invertebrate fossils such as bivalves, gastropods ammonites, and belemnites, as well as pieces of fossil wood containing shipworm burrows and small burrowing bivalves.

An assemblage of small vertebrate remains was discovered on the last afternoon of the survey. These could prove to be extremely important as vertebrate material is virtually unknown from the Sundays River Formation, though dinosaur and other vertebrate remains are known from the coeval Kirkwood Formation and plesiosaur remains have been collected from the Sundays River Formation along the Swartkops River. Visible material was excavated and taken to the Albany Museum

It was recommended that, as part of the next phase, a palaeontologist should be contracted to carry out a two day investigation of, and excavation of the important new vertebrate fossil site.

Report

Between the 29th and 30th March 2010 a thorough investigation of the vertebrate locality was conducted.

On the 29th March the bank, where the initial bone remains were located, was cut back at the same height. Further bone fragments were located, similarly associated with fossil marine shells and wood fragments. It became clear that the fossil material was somewhat disrupted and not *in situ*. No doubt it was derived during weathering and decay of the clays, from a proximal source perhaps a little higher up the slope. Due to soil and vegetation cover it was not possible to locate the original source. Nonetheless useful material was collected that complements that previously collected and has been deposited with it in the Albany Museum.

On the 30th March a thorough investigation of the area was conducted with a view towards locating any further bone remains in the near vicinity. No further bone localities were found, though, further abundant invertebrate and driftwood material was noted.

Conclusion

The provenance of the vertebrate material previously collected was explored and useful additional material was collected, though the exact original source of the material was not successfully determined.

As previously noted, road plans need to avoid disruption of this area, and future access for palaeontologists needs to be facilitated as weathering of the slope, over the years, may expose more vertebrate material.