

**Palaeontological Impact Assessment for redevelopment of portions 66 and  
67 of Brakkloof 443, Plettenberg Bay**

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## Executive summary

No palaeontological material of any importance was observed and no mitigation is therefore specified.

## Background

Portions 66 and 67 of Brakkloof 443 were originally developed as a single property with a single dwelling. It is now the intention to redevelop the combined stands to include 9 units. André Vercueil Consulting Architects are preparing a Heritage Impact Assessment for this project and subcontracted Dr Rob Gess of Rob Gess Consulting to compile a Palaeontological Impact Assessment for the development.

The site was fully surveyed on foot by Dr Robert Gess on the 19<sup>th</sup> of April 2022.

Figure 1: Proposed Development layout.



## Geology and Palaeontology

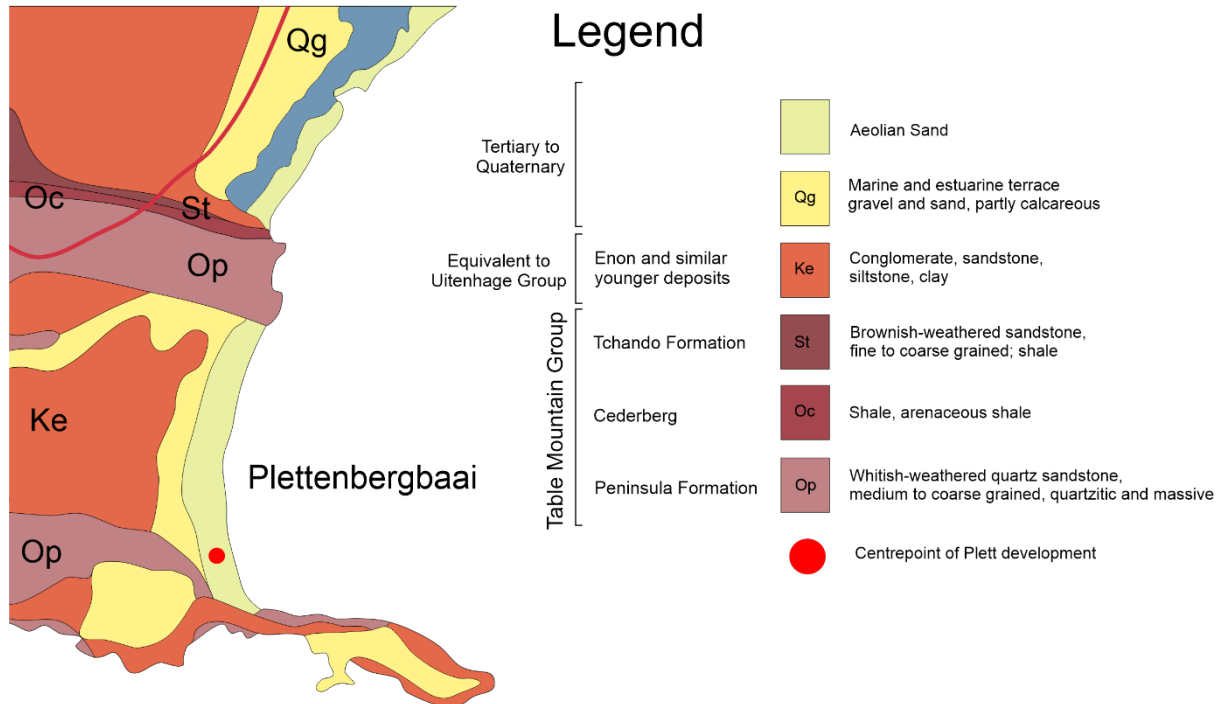


Figure 2: Geological map of the study area and surrounding areas according to geological survey data.

The planned development is situated on a geologically relatively recent aeolian barrier dune system, running parallel to Roberg Beach, which separates the beach from a wetland area which probably represents a former estuarine inlet.

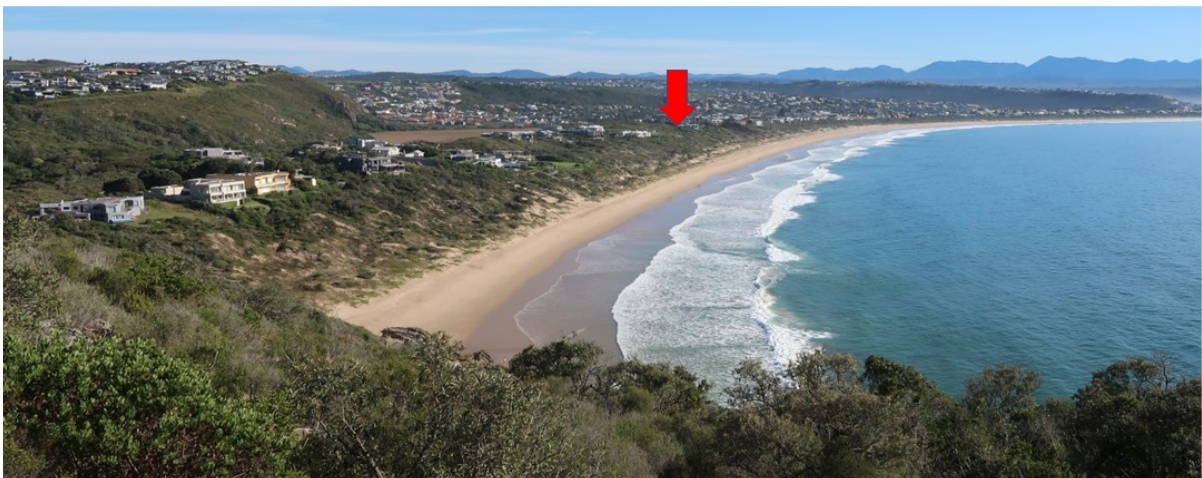


Figure 3: Position of proposed development (marked with red arrow) seen from Roberg

Peninsular.

Recent (Holocene) mobile sands of this type not uncommonly contain important records of ancient mammal faunas, either as isolated occurrences or associated with marine shell middens accumulated by human activity.

### Site visit



Figure 4: Satellite image of the study area with points where photos taken numbered.

Much of the eastern portion of the study area is covered in a mixture of low growing indigenous sand veld and invasive Rooikrantz (Fig. 3, dark green), presumably introduced into the area to stabilise the line of dunes. This vegetation currently hampers assessment of the palaeontological potential of the underlying sands (Figs 5-10).

In the vicinity of the existing dwelling, evident mining of sand for construction of the building, levelling, and other concomitant disturbances, resulted in removal of the humus-rich surface layer. This has prevented recovery of vegetation and these areas have developed into blow-outs (Figs 11-15, 18), which permit assessment of the underlying sands. In some areas early stage calcretisation is evident, with the development of rhizocretes around former roots (Fig. 16). Holocene terrestrial snail shells were also observed (Fig 17). Very little indications of 'strandloper' middens were observed, with only a few sparse scatters of sand mussels being observed (Fig 19). No large mammal bones or significant palaeontological material was observed.



Figure 5: View southwards from point 9 (Fig. 4) along boundary of proposed development properties (situated to the left).



Figure 6: View south west from point 8 (Fig. 4) showing westerly portion of the intended development area. The property extends to approximately the overhead electrical lines and white electricity box (visible to right of centre). The wetland is visible below the properties with cliffs of Table Mountain Group, Peninsular Formation, sandstone beyond.



Figure 7: View south east from point 8 (Fig. 4) showing low growing indigenous strand veld in the foreground. (Robberg Peninsular in the background with pale cliffs of Table Mountain Group Peninsular Formation below and vegetated Cretaceous Enon-type conglomerates above).



Figure 8: View east from point 8 (Fig. 4) showing the western portion of the proposed development area with the existing structure in the centre, and the northern boundary fence to left.



Figure 9: View south west from point 2 (Fig. 4) showing thick stands of Rooikrantz.



Figure 10: Fertile 'top sand' with a high organic content exposed near point 8 (Fig. 4).





Figure 11: View north west from point 1 (Fig. 4) showing eroded dune front.



Figure 12: View south west from point 3 (Fig. 4) showing sand blowout resulting from previous construction activities.



Figure 13: View north west from point 4 (Fig. 4) showing former sand mining area.



Figure 14: View south east from point 5 (Fig. 4).



Figure 15: Weathered former face of sand extraction area at point 6 (Fig. 4).



Figure 16: Rhizoliths (calcretised root casts) exposed in the bank at point 6 (Fig. 4).



Figure 17: Terrestrial land snail shell in lightly consolidated sand at point 6 (Fig. 4).



Figure 18: Area disturbed by sand mining at point 7 (Fig.4). looking to the south east.



Figure 19: Part of a small concentration of sand mussels exposed at point 7 (Fig. 4).

### **Conclusions and Recommendations**

The proposed development area is situated on a long beach barrier dune system that separates Robberg Beach from a back barrier wetland that is likely to have, at times, comprised an estuarine inlet. As such this environment might well have been favoured by large mammals, such as hippo, and to have been attractive to ‘Strandloper’ communities. That said, such communities are more likely to have been most attracted to settle somewhat closer to the Robberg Peninsular with its greater abundance of shellfish.

The proposed development site is largely too covered in thick vegetation, particularly invasive Rooikrantz, for all surface outcrop to be investigated. Much of the area around the dwelling has however been disturbed, with removal of organic rich top sand leading to the development of blow outs. These were all carefully examined. Initiation of calcretisation of sediments was observed with the development of rhizoliths. Small terrestrial snail shells were noted throughout the sand.

Very little indication of strandloper activity was observed, with only sparse small scatters of sand mussels being observed.

No palaeontological material of any importance was observed and no mitigation is therefore specified.

**It does however remain possible that after the bush has been cleared, or during construction, large mammal bones may be uncovered – associated with midden deposits, former hyena dens or on their own.**

**Should any such materials be suspected to be present, during clearing, levelling or excavation of foundations a palaeontologist should immediately be contact to assess the occurrence.**

## References

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