# Desktop Palaeontological Impact Assessment for Van Stadens Wind Farm

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## Background

Metrowind wish to establish a wind farm adjacent to Van Stadensrivermouth west of Port Elizabeth in the Nelson Mandela Bay Metrpol (fig. 1). This is conceived of as consisting of nine wind turbines at the Van Stadens Wind Farm Site.

SRK Consulting were contracted to carry out an EIA for this project. They subcontracted Rob Gess Consulting to carry out a Palaeontological Impact assessment. As the area has a minimum likelihood of palaeontological heritage being affected this was limited to a desktop assessment.

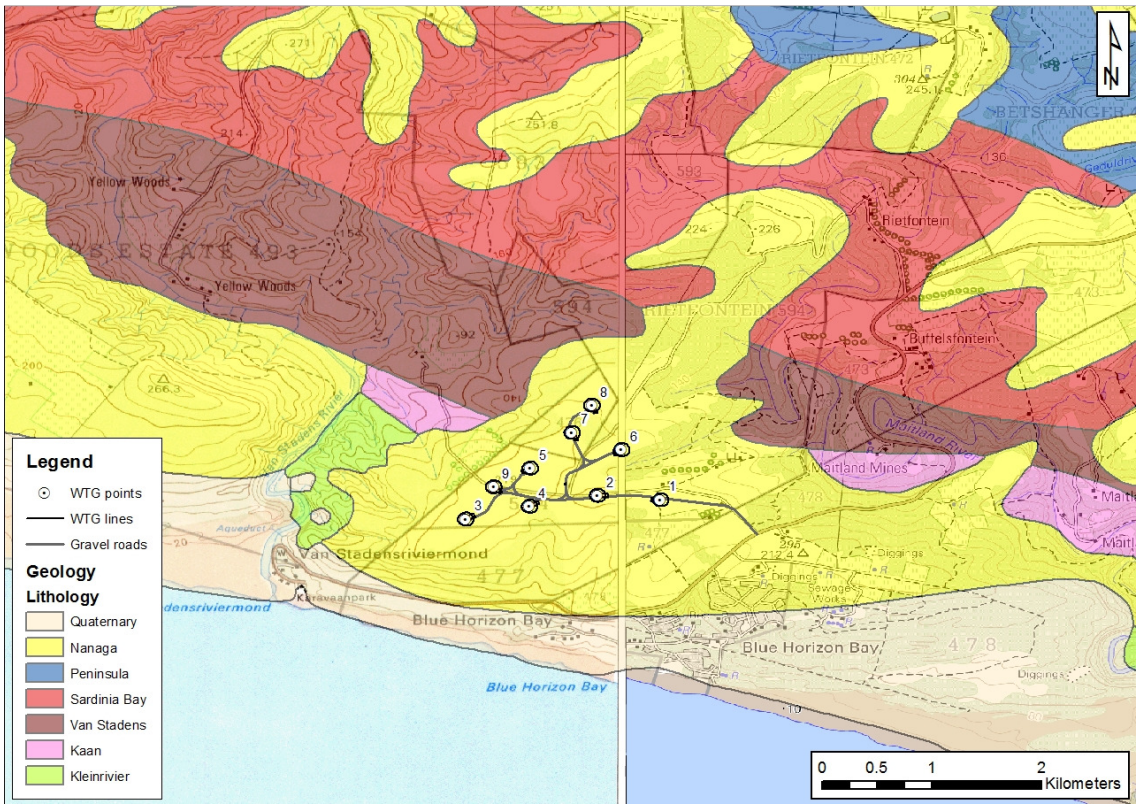


Figure 1. Proposed layout of wind turbines near Van Stadens River superimposed on topographic and geological survey data.

**Geology and Palaeontology**

According to South African Geological Survey data Turbine positions are all to be sited on strata of the **Nanaga Formation**. This consists of semi-consolidated to consolidated late Tertiary to early Quaternary deposits of Aeolian (wind-blown) sand that was accumulated in a near coastal situation as sand dunes. These tend to be somewhat calcareous due to shell fragments in the beach derived sands. These sands have not proven fossilferous.

It seems likely that the foundations of wind turbines may pass through the Nanaga Formation into the more stable underlying strata. These belong to the Far older **Kleinrivier**, **Kaan** and **Van Stadens Formations** of the Gamtoos Group of Proterozoic, Naman age. The Kaan Formation is a predominantly calcareous unit interpreted as a shallow marine deposit. The pelitic and arkosic Kleinrivier and Van Stadens Formations are interpreted as resulting from alluvial fans and turbidites that grew out into the shallow marine basin.

As in most Proterozoic deposits no macrofossils have, as yet, been located in the Gamtoos Group, though a variety of thin-shelled microfossils have been recorded.

**Conclusions and Recommendations**

The developmental area is underlain by strata of the Nanaga Formation which is not known to be palaeontologically productive.

It is possible that strata underlying the Nanaga Formation, belonging to the Gamtoos Group may also be affected. These are not known to contain any macrofossils and their age suggests that they are unlikely to yield any.

It is therefore concluded that **no monitoring or mitigation will be required**.

Should any possible fossils be uncovered the ECO should put them in a safe place and immediately notify SAHRA or the palaeontologist.

**References**

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