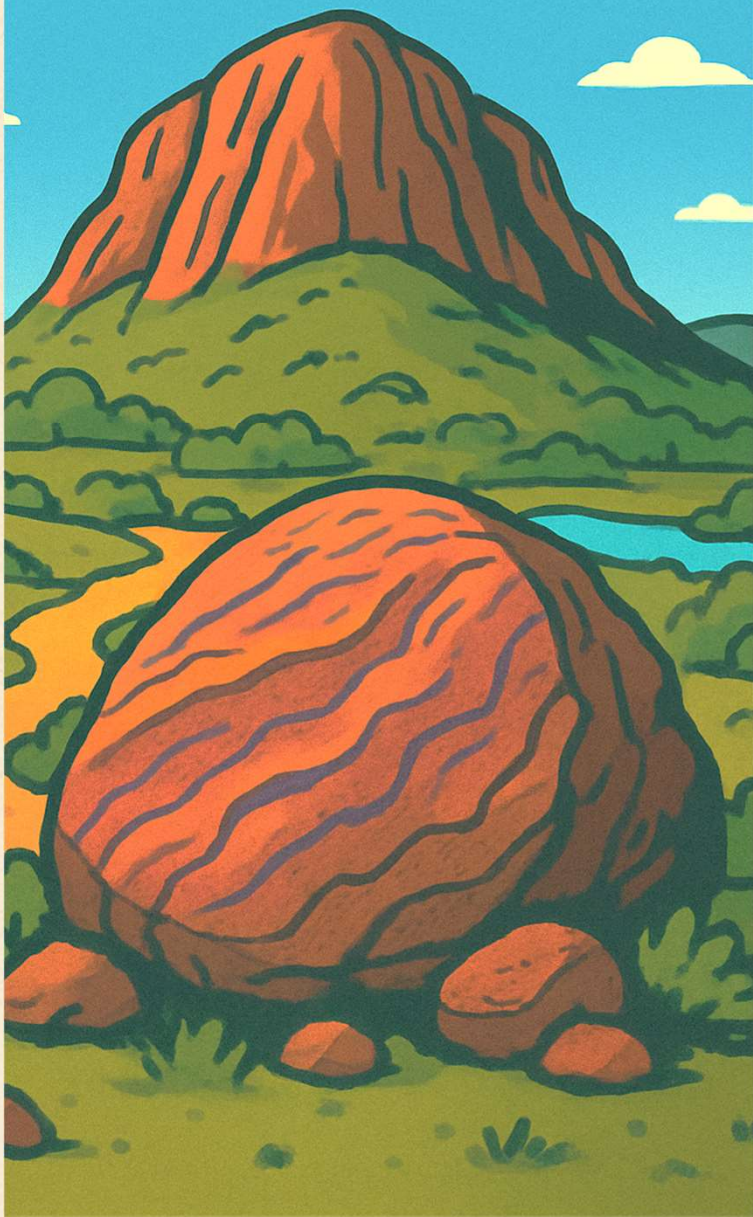
## INTERESTING FACTS

- The rocks that comprise the Pilanesberg Complex have been age dated to approximately **1,400 million years**.
- The Pilanesberg Complex is the **third largest Alkaline Complex** in the world and one of the most well preserved.
- The diameter of this volcanic complex is approximately **25 km,** and it covers a total area of approximately **625 km²**.
- The Pilanesberg Complex has a mineral named after it. This mineral was named "**pilanesbergite**" and was found and identified in a sample of green foyaite (currently, this is the only known locality for this mineral).
- This geological terrain formed through **volcanic activity** which formed a volcano that rose approximately **3.5 km high.**
- Exactly how the Pilanesberg Complex **formed** remains a **contentious topic** among geologists. It is important to note that the **geometry** of the sub-volcanic system beneath the Earth's surface is **speculative** due to the lack of systematic mineralogical layering, as well as due to the lack of preserved contacts between the rock units.
- The reason there are many unusual minerals in the Pilanesberg Complex stems from the fact that magmas were very **rich in alkalis** (sodium and potassium), relative to silicon and aluminum.



*Compiled by: Patrick Richards*

# GEOLOGICAL SITES OF THE PILANESBERG IGNEOUS COMPLEX

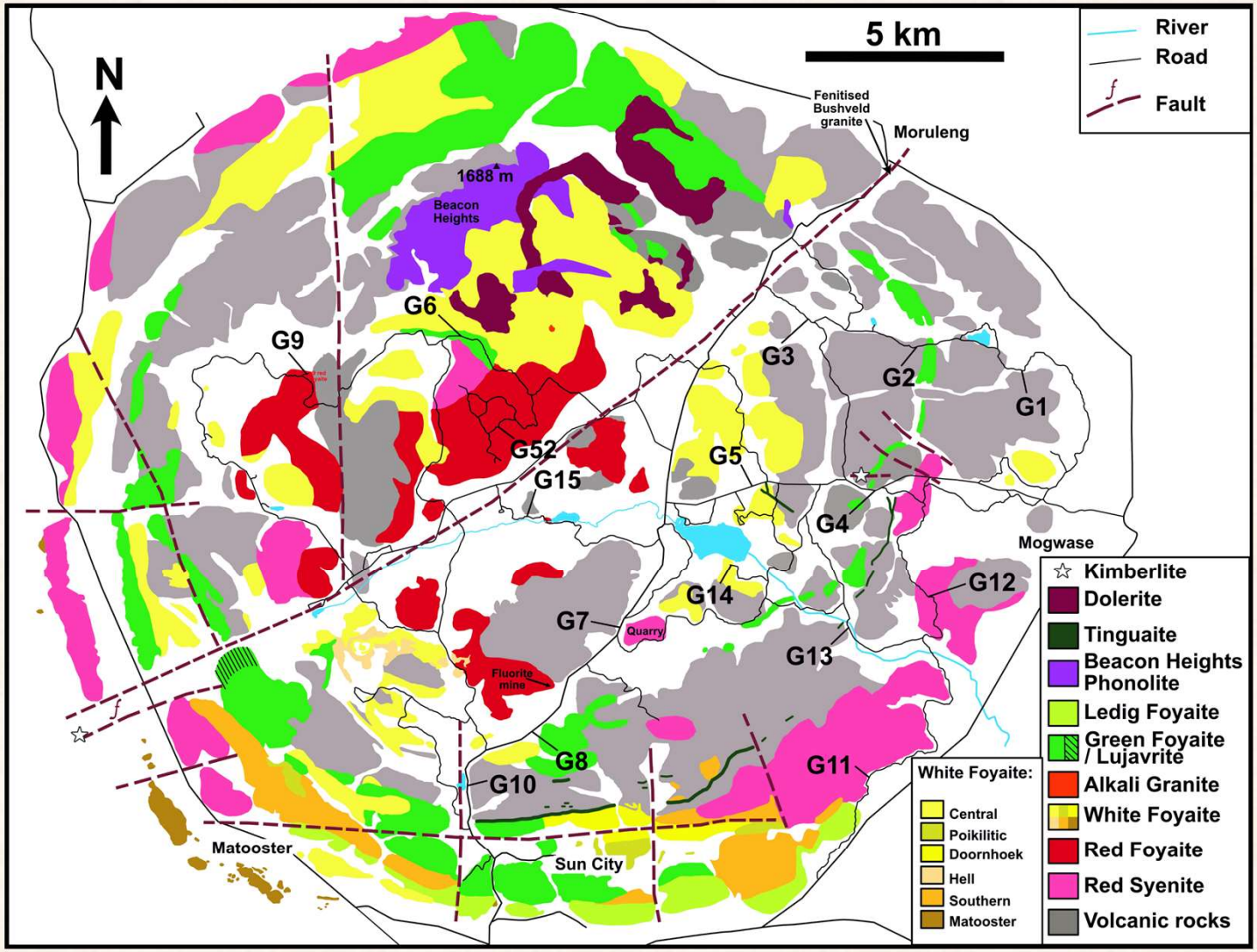


# GEOGRAPHICAL LOCATION OF THE 15 GEOLOGICAL SITES DISTRIBUTED THROUGHOUT THE PILANESBERG NATIONAL PARK SHOWN ON A GEOLOGICAL MAP

## LIST OF THE G-SITES

G1: Volcanic tuff *(25°13'23.12"S; 27°12'9.79"E)*
G2: Nepheline syenite *(25°13'1.20"S; 27°10'46.31"E)*
G3: Lava *(25°12'42.30"S; 27° 8'52.91"E)*
G4: Kimberlite *(25°15'5.83"S; 27°10'1.38"E)*
G5: White foyaite *(25°15'2.45"S; 27° 8'2.33"E)*
G6: Green foyaite *(25°12'55.40"S; 27° 3'26.35"E)*
G7: Red syenite *(25°17'1.43"S; 27° 5'53.48"E)*
G8: Old fluorite mine *(25°17'58.09"S; 27° 4'55.45"E)*
G9: Red foyaite *(25°13'26.22"S; 27° 0'55.80"E)*
G10: Green foyaite *(25°20'21.12"S; 27° 3'47.23"E)*
G11: Ledig foyaite *(25°20'8.41"S; 27° 9'30.10"E)*
G12: Red syenite *(25°17'45.96"S; 27°11'2.15"E)*
G13: Uranium-bearing tuff *(25°17'2.54"S; 27° 9'28.55"E)*
G14: White foyaite *(25°16'11.17"S; 27° 7'36.30"E)*
G15: Red foyaite *(25°15'33.19"S; 27° 4'41.27"E)*
G52: Geological sites of the Pilanesberg *(25°14'14.12"S; 27° 3'56.16"E)*

**Information Board**: A detailed and comprehensive information board on the geology of the Pilanesberg igneous complex can be found at the Fish Eagle picnic site. G14 is also located within the picnic site.




*Note: due to the resolution of the geological map presented here, the geology indicated on the map may not match the geology at the prescribed geological site. Geological map sourced from Elburg, M. A., and Andersen, T. (2026). The Pilanesberg Complex and related igneous rocks. South African Journal of Geology, 129(1), 207-239. doi:10.25131/sajg.129.2739.*

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