



WATER · SOIL · LIFE

THE GROUND BENEATH YOUR FEET

WHERE
GLEN AGGY

HEIGHT
±1 435m

ROCK AGE
±2 900 MILLION YRS

You are about to traverse one of the oldest pieces of land surface on Earth. The hills you will climb today were volcanoes before there was oxygen in the air, before there was a single living thing on dry land way before the continents were arranged in anything like what they look like today. Let's look at the soil you're standing on, the climate that guides all life here and what that life is – and why all of it is worth looking after.

THE ROCKS AND SOIL

Volcanic ash, turned to stone, before life left the sea

The rock under Glen Aggy is mapped as the **Amsterdam Formation** – named after the town down the road.

It is **tuff** the name for volcanic ash and dust that fell from eruptions, settled in layers, and then was compressed into hard rock. Around the tuff sit the lavas, quartzites and shales of the **Pongola Supergroup**, with gabbro and granite of the Usushwana Complex pushed up through them.

These rocks are roughly **2 900 million years old**. They sit on the Kaapvaal Craton, an ancient, stable slab of this continent that has survived nearly three billion years of the Earth rearranging itself around it. The Pongola rocks are among the best-preserved volcanic and sedimentary sequences of their age anywhere in the world – geologists come from all over the world to study them.

On the run: Hard tuff and quartzite resist weathering and stand up as ridges and kranse, while the softer shales have worn away, forming the valleys between them. That difference is exactly why the 23 km route has 562 m of climbing in it. The stony, shallow ground on the crests and the deeper soil in the bottoms are the same story, a very, very long story.



THE WEATHER

RAIN A YEAR

±900 mm

Well above the SA average
(about 460 mm)

FALLS IN SUMMER

85%

October to March
Winters are dry

JULY NIGHT

3.6 °C

Average low

JANUARY DAY

23.7 °C

Average high

This is **highveld summer-rainfall country** – warm and wet summers, cold and dry winters – with a lot of mist to add. Height above sea-level is what makes it: at roughly 1 500m the air cools as it is pushed up off the Lowveld, making the moisture turn to clouds and shedding over these lands as rain. In October, the rain averages about 96 mm. In December that increases to about 168 mm. Yet in July almost nothing at all.

On the run: Early October is right at the turn of the seasons. The grass has either just woken up and is starting to push through fresh growth or is at its driest and shortest of the year. Meanwhile, the first thunderstorms have usually just started and mornings can be cold and often misty, but they clear fast into gorgeous days. Its great running weather – but the ground may be hard or muddy. Also keep in mind that the sun at this altitude is stronger than it feels.

THE WATER

You are standing at the top of a system

No river flows into Glen Aggy. Every drop of water here arrives as rain and leaves downhill. This farm sits in the headwaters of the **Usutu River**, in a catchment that drains east into eSwatini, proceeds to join the Great Usutu and reaches the sea at Maputo Bay in Mozambique. The water you cross today is as clean as it will ever be. The water came from the sky and filtered through the pristine grasslands of Glen Aggy.

South Africa has formally mapped the places that produce a disproportionate share of the country's water. Glen Aggy is one of them: the **Upper Usutu Strategic Water Source Area**, about 539 000 hectares carrying a national priority rating. Roughly 8% of South Africa's land surface produces about half of its river flow – and you are running on a piece of it.

Underground: The rocks hold water in cracks rather than in pores, mostly in a shallow zone near the surface. Boreholes here are typically only 20–30 m deep, and about 50–75 mm of each year's rain makes it down to recharge them. A fractured aquifer like this fills quickly and empties quickly – what happens on the surface shows up in the water fast (And that's how we know the water is pristine (because the grasslands are))

THE LIFE OF GLEN AGGY

Old-growth grassland – and it needs protection from people who love the land

The veld here is **KaNgwane Montane Grassland**, part of the Highveld Grassland Biome. On South Africa's Red List of Ecosystems it is classed as **Endangered**, because of the small it covers to begin with and the fact that large parts are still being lost. This particular veld type only occurs in South Africa, eSwatini. Grasslands may appear simple, but they definitely are not! The great majority of a grasslands living matter is all underground, in root systems and soil life built up over centuries and an ecosystem perfected over eons. This is why it survives fire, frost and grazing and comes back every spring. It is also why it cannot be replaced: plough an old grassland, and what grows back is not the same thing, and will never be in your lifetime nor your children's. Grasslands are old growth ecosystems, just like forests and just as diverse.

What to look for today: Early October is the start of the great show. The first spring flowers come up out of bare, sometimes recently burnt ground before the grass does, growing from underground bulbs or rootstocks that have often been there for decades. Cranes, bald-headed Ibises and other endangered birds work this kind of country. Many other animals call it home – You will likely see Oribi around too, nevermind Glen Aggy's famous Simbra cows that now do the work of the large herbivores like buffaloes of days gone past.

WHY PRIORITISE WHOLE ECOSYSTEM FARMING?

Ancient, hard rock gives thin, stony soils that are easily lost and very slowly replaced. High rainfall on steep ground means water moves fast and takes soil with it if nothing holds it. Responsible grazing of pristine, deep-rooted natural grasslands and a strong focus on regenerative farming is what holds it all together and keeps it pristine. The same roots that grow here are what keep the water clean and the springs running for everyone downstream, all the way to Mozambique. The cows and wildlife are the ones recycling life back into the soils to keep those roots growing and the pure water flowing.

Farming this country means celebrating where you are, not fighting against it: Keep the soil covered, Keep the water walking instead of running, and celebrate the life all around you. By embracing custodianship of this beautiful land, Glen Aggy can produce good food from healthy animals walking upon a happy land.



Sources. Vegetation type and ecosystem threat status: South African National Biodiversity Institute, national vegetation map and 2021 National Red List of Ecosystems. Water source area and catchment: national Strategic Water Source Areas for surface water, 2021. Groundwater and rainfall figures: national hydrogeological mapping and a 30-year climate record for this point. **Note.** All figures are read from national datasets at this farm's position and are rounded. They describe the area well and the individual metre poorly – an auger hole, a road cutting or a wet patch underfoot beats any map. Nothing here is a recommendation for any specific piece of ground.