

Grasses move up the mountain

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The effects of global change are hotly debated. Studying the shifts in species that take place across drastic changes in altitude, or altitude gradients, can reveal much about how vegetation species adapt to temperature changes.

What better time than now to measure the shifts across the altitudinal gradient that exists between the Camdeboo National Park, at an altitude of 800m, and the adjacent Sneeuwberg mountain range, where the highest peak is

2 502m². Mountains are typically cooler than valleys or lowlands.

The distribution of cool-range species, such as C3 grasses, may shrink as conditions for lowland species, such as warm-range C4 grasses, become more favourable. As temperatures change, cool-range grasses might give way to warm-range grasses.

To examine these changes across the Karoo Escarpment, the South African Environmental Observation Network (Saeon) Arid Lands Node initiated temperature monitoring at 16 sites between Camdeboo National Park's Gannaleegte area near Graaff-Reinet, and the peak of the Compassberg mountain range near Nieu-Bethesda. Measurements are made by means of tiny data loggers, or "i-Buttons", placed in the middle of a screen.

To date, the Camdeboo logger has recorded 16 104 hourly temperature readings. From Camdeboo, which has an average temperature of

19°C, conditions get steadily cooler at higher altitudes. At the peak in the Compassberg, temperatures are on average 10°C lower. The maximum temperatures are even more contrasting, with the maximum temperature in Camdeboo reaching 43°C, compared with 28°C in the Compassberg. Minimum temperatures, however, did not change much, with Camdeboo's minimum reaching -5°C, and the Compassberg's -9°C.

While the difference between the coolest and hottest data point during a 24-hour period was on average 17°C at Camdeboo, it was only 7°C on top of the Compassberg.

In an initial study, Saeon has examined the C3 and C4 grasses across the upper 800m of this gradient on the slopes of the Compassberg.

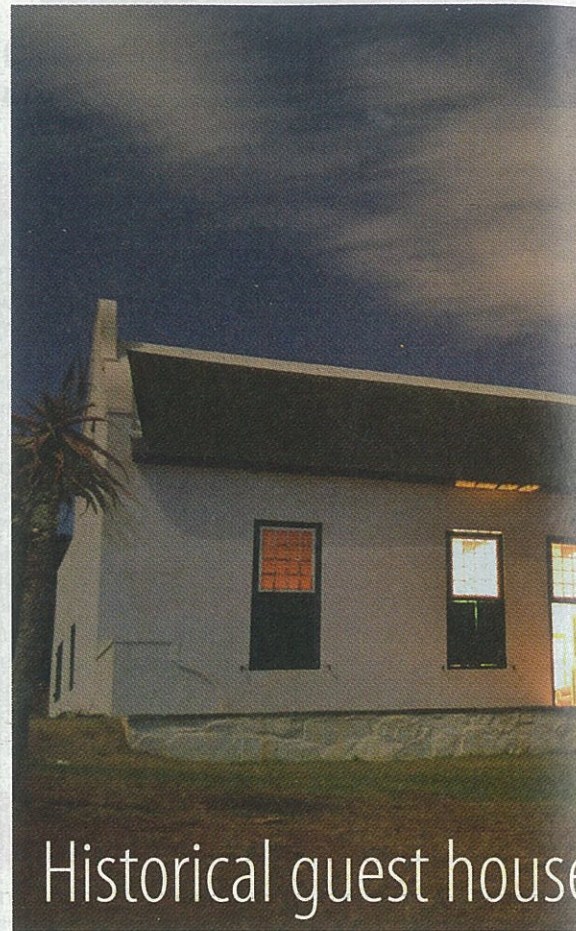
It was found that C4 grasses decline and C3s increase upslope.

If this pattern is also seen on other slopes, the investigation should in future be extended across the entire range straddling the Karoo Escarpment.

What will happen in Camdeboo as things get hotter over time, and how will this compare with what is happening higher up the slope? Are lowland species marching up the slope?

Currently, Saeon's window into Camdeboo is no bigger than an i-Button, not much bigger than a R1 coin, but information streaming through this tiny window will hopefully lead to more extensive studies concerning ecosystem changes driven by global change.

What will happen in Camdeboo as things get hotter over time?



Historical guest house

Winterhoek guest house in Camdeboo National Park is one step closer to being opened up for bookings after members of Graaff-Reinet's Heritage Society donated R15 000 towards its completion.

A few individuals from Graaff-Reinet also contributed to the fundraising drive.

A cheque was handed over to SANParks' regional general manager Dries Engelbrecht and park manager Mzwandile Mjadu by the heritage society's Theuns Eksteen and Peter Whittlock at the end of last year.

"We are very grateful for this most generous donation," said Engelbrecht at the handover. "It will go a long way towards speeding up the finer details around the renovation of Winterhoek before we can officially open it to guests."

The house, which is more than 170 years old, was restored thanks to the Rupert Historic Homes Foundation in 2014. It was later enhanced with furniture fitting of the style of the era with the assistance of the SANParks Honorary Rangers. The guest



The Winterhoek

house will be once the finish is completed. Ours is a homestead with a kitchen even with a hearth. The building, which has been built in a style that were typi-

Chippings assist wi