

Getting global change directions from Compassberg

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Exciting: Tshililo installed a network of temperature i-buttons on and around the Compassberg

With CO₂ and temperatures going up, which way will rainfall go? And what about species that are fine-tuned to conditions of these three factors? To try to get directions, the SAEON Arid Lands team first set out to the Compassberg in 2014 ([link to previous article](#)). Not only is this mountain the highest point of

the Karoo (altitude 2502 m), but also perhaps the wettest. Though nobody has yet measured rainfall at its tip (SAEON is about to), the long-term average rainfall at a nearby farmhouse is 500 mm per annum, while only 30-km further away where Karoo bossieveld begins, it is already down to 300 mm.

Our first results indicate that with increasing height up the mountain, C4 grasses decrease in abundance, while C3 grasses gradually increase. To make sure, Tshililo Ramaswiela, Marco Pauw and Joh Henschel are currently in the process of extending the study, surveying vegetation on more plots (now totalling 70 across all levels and sides of the mountain), installing instruments, and planning future directions for this project. Will C3 grasses recede higher up the mountain as it gets warmer, or will fertilization by CO₂ cause it to expand further downslope? How does rainfall and soil moisture affect this? How will other species respond?

The Compassberg, in the context of its surroundings, is like a microcosmos where SAEON can test ideas and investigate trends that may result from global change. Watch this space!