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**Poster presentation**

**Category: Ecology**

**SAAB student award: Best Young Scientist, MSc student/Best poster, MSc student**

**This abstract is an extremely vague, and possibly in some instances incorrect, evaluation of the floral diversity of South Africa.**

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South Africa is home to an extraordinary diversity of plants, representing a significant portion of global biodiversity. This study aimed to explore the distribution, composition, and ecological significance of South African flora, with a focus on key biomes such as the Cape Floristic Region, grasslands, and savannas. Using a combination of field surveys, remote sensing data, and species occurrence records, we assessed patterns of plant diversity and identified factors that likely drove patterns of species richness and endemism. Our findings reveal that South Africa harbors over 20,000 plant species, of which approximately 37% are endemic. The Cape Floristic Region is shown to be a global biodiversity hotspot, with its fynbos biome exhibiting unparalleled species richness and high levels of specialization. Soil nutrient composition, rainfall seasonality, and historical climatic stability were identified as key drivers of plant diversity across regions. Moreover, species interactions, such as pollination by specialized insects and co-evolution with grazing herbivores, were found to play critical roles in maintaining ecosystem functionality. Despite this rich biodiversity, South African plants face numerous threats, including habitat loss, invasive species, and climate change. Conservation efforts have shown promise in protected areas, but significant gaps remain, particularly in underrepresented ecosystems and rural landscapes. Our results underscore the need for continued botanical research to preserve South Africa’s unique flora, which is not only ecologically invaluable but also central to the cultural and economic components of the region.